Final

2010 Urban Water Management Plan

for the

Southern Division – San Diego County District

Prepared for:

CALIFORNIA
AMERICAN WATER

Prepared Under the Responsible Charge of:

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WSC
WATER SYSTEMS CONSULTING, INC.

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LIST OF ACRONYMS AND ABBREVIATIONS

AB32- California Assembly Bill 32 (Global Warming Solutions Act of 2006)

afy- acre feet per year

American Water- American Water Company

AWWA- American Water Works Association

BMP- Best Management Practice

CAW- California American Water

CDPH- California Department of Public Health

CII- Commercial, Industrial, and Institutional

CPS- Comprehensive Planning Study

CPUC- California Public Utilities Commission

CRA- Colorado River Aqueduct

CUWCC- California Urban Water Conservation Council

CUWCC MOU- California Urban Water Conservation Council Memorandum of Understanding

District- San Diego County District

DMM- Demand Management Measure

DWCP- Desalinated Water Conveyance Pipeline

DWR- California Department of Water Resources

ETo- Evapotranspiration

GHG- Greenhouse Gas

gpm- gallons per minute

GRC- General Rate Case

HCF- hundred cubic feet

HECW- High Efficiency Clothes Washer

HET- High Efficiency Toilet

HEU- High Efficiency Urinal

IID- Imperial Irrigation District

IOU- Investor Owned Utility

IRWMP- Integrated Regional Water Management Plan

kWh- kilowatt-hour

MCL- maximum contaminant level

MG- million gallons

MWD- Metropolitan Water District of Southern California

MWWD- Metropolitan Wastewater Department (City of San Diego)

LL- Large Landscape

NRW- Non-Revenue Water

OSR- On-site Water Recycling

PV- Photovoltaic (solar)

Resource Action Programs- RAP

SANDAG- San Diego Association of Governments

SB7- Senate Bill x7-7

SB7 Guidebook- the California Department of Water Resources' *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*

SBWRP- South Bay Water Reclamation Plant

SDCWA- San Diego County Water Authority

SWP- State Water Project

UWMP Act- Urban Water Management Planning Act

UWMP- Urban Water Management Plan

UWMP Guidebook- the California Department of Water Resources' *Guidebook to Assist Water Suppliers in the Preparation of a 2010 Urban Water Management Plan*

ULFT- Ultra Low Flow Toilet

WD- Water District

WSS- WaterSense Specifications

WRAM- Water Revenue Accounting Mechanism

1 PLAN PREPARATION

This plan comprises the 2010 Urban Water Management Plan (UWMP) for California-American Water Company's (California American Water's) Southern Division - San Diego County District, as required by the California Urban Water Management Planning Act (UWMP Act). The UWMP Act requires all urban water suppliers with more than 3,000 connections or distributing more than 3,000 acre feet per year (afy) to complete an UWMP every five years ending in '5' and '0'. The UWMP Act is administered by the California Department of Water Resources (DWR), who is responsible for compiling data for statewide and regional analysis, and publishing the accepted documents online for public access.

The UWMP is a valuable planning document used for multiple purposes:

- Meets a statutory requirement of the California Water Code
- Provides a key source of information for Water Supply Assessments (WSAs) and Written Verifications of Water Supply
- Supports regional long-range planning documents including City and County General Plans
- Provides a standardized methodology for water utilities to assess their water resource needs and availability
- Serves as a critical component of developing Integrated Regional Water Management Plans (IRWMPs)
- Provides a resource for regional involvement in the California Water Plan

California American Water is a privately owned public utility providing water services to over 630,000 people in 50 communities throughout California. California American Water is organized into three divisions: Northern, Central and Southern. The Northern Division includes the Sacramento and Larkfield Districts, the Central Division includes the Monterey District, and the Southern Division includes the Ventura County, Los Angeles County and San Diego County Districts.

The San Diego County District in California American Water's Southern Division is a single service area exceeding the 3,000 afy/ 3,000 connections threshold. California American Water has prepared and submitted to DWR three (3) previous UWMPs for the San Diego County District: 1995-2000; 2000-2005; and 2006-2010 (a revised final of the 2006-2010 plan was submitted to DWR in October 2009, and was accepted by DWR as complete in March 2010). In addition, the District submitted a Water Shortage Contingency Plan in January 1992. The District was previously called the Coronado District; thus, the previous UWMPs were designated to be for the Coronado District. California American Water has since changed the name of the District to the San Diego County District. The service area boundaries have remained the same.

This plan was prepared based on guidance from DWR's *Guidebook to Assist Water Suppliers in the Preparation of a 2010 Urban Water Management Plan* (UWMP Guidebook) (1), DWR Urban Water Management Plans Public Workshops and Webinars, DWR Senate Bill x 7-7 (SB7) public listening sessions, *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (SB7 Guidebook) (2), and the 2010 DWR Review Sheets (Appendix E).

The 2010 UWMPs must be adopted by the water purveyors by July 1, 2011 and submitted to DWR by July 31, 2011. Usually, UWMPs are due on December 31 of years ending in '0' and '5', but a six month extension has been granted for submittal of the 2010 UWMPs to provide additional time for water suppliers to address SB7 requirements (20% reduction by 2020). The final 2010 UWMP Guidebook became available on March 2, 2011. DWR's 2010 UWMP schedule is summarized in Table 1-1.

Table 1-1. Preliminary Schedule for DWR's 2010 UWMP Guidebook Update

Date	Event/Task
November 2010	Initial workshops
December 21, 2010	Draft Guidebook released
March 2011	Amended Final Guidebook released
January/February 2011	Additional workshops
July 1, 2011	Adoption of UWMPs by water purveyors
July 31, 2011	UWMPs due to DWR

According to the 2010 Guidebook, "As a general rule, DWR reviewers will consider a plan complete if it meets the criteria listed in the Review Sheets" (1). A DWR Review Sheet checklist is provided in Appendix E. Table 1-2 summarizes changes to the UWMP Act since 2005 that have been addressed in this UWMP.

Table 1-2. Summary of Changes in the UWMP Act Since 2005

Change	New/ Revised Water Code Section Number	Summary of Changes	UWMP Approach
Notification	10621(b)	*Added*: Provide at least 60 days notification to any city or county within which the supplier provides water for the public hearing required by Section 10642.	The Cities and County within the District's service area will be notified in a timely manner to meet the requirement.

Change	New/ Revised Water Code Section Number	Summary of Changes	UWMP Approach
DMM Compliance	10631(j)	*Changed*: Members of the CUWCC will be considered in compliance with the DMM evaluation (10631 (f) and (g)) if they comply with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008 and by submitting their CUWCC annual reports.	California American Water is a member of the CUWCC but it is not known if the District is in full compliance since the District has not yet received indication from CUWCC. The 2009-2010 CUWCC BMP Annual Report is attached in Appendix D.
Wholesale Suppliers Source Water	10631(j)	*Deleted:* Text identifying the specific types of water an urban water supplier may seek information from a wholesaler supplier. The option to seek information from a wholesale supplier is not deleted, just the identification of source water types.	No impact to this UWMP.
Lower Income housing water use projections	10631.1	*Added:* Water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households (Health and Safety Code Section 50079.5) will be provided. These water use projections are to assist a supplier in complying with Government Code Section 65589.7 to grant priority of the provision of service to housing units affordable to lower income households.	Values are estimated based on California American Water customer data and the County of San Diego's Regional Housing Need Determination (See Section 3.2.1)
Linkage of DMM to State grant or loan program	10631.5(a)	*Changed:* After January 1, 2009, eligibility for state-funded grants or loans will be conditioned on the implementation of Section 10631 DMMs. If a DMM is not currently being implemented, then the urban water supplier submits to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement. If a DMM is not locally cost-effective (the present value of the local benefits is less than the present value of local costs to implement the DMM), then the water supplier will submit supporting documentation and the DWR will provide a determination within 120 days of UWMP submittal.	No impact to this UWMP.

Change	New/ Revised Water Code Section Number	Summary of Changes	UWMP Approach
DMM Compliance	10631.5(b)	*Added:* DWR will consult with other agencies and public input and develop eligibility requirements for meeting compliance with DMM implementation. Determination of DMM compliance will be based on an individual water agencies implementation or participation with a regional group. An individual water agency will not be denied eligibility if another participating regional agency does not comply with each of the DMMs.	No impact to this UWMP.
Determination of Grant and Loan Eligibility	10631.5(c)	*Added:* Grant and loan eligibility, based on DMM compliance, will be included in the funding guidelines.	No impact to this UWMP.
	10631.5(d)	*Added:* The administering agency will request and eligibility determination from DWR regarding "the requirements of this section". DWR will respond within 60 days.	No impact to this UWMP.
	10631.5(e)	*Added:* The water supplier may submit copies of its annual reports and other relevant documents to assist DWR in determining implementation or scheduling of the water suppliers DMMs. Water suppliers that are signatories of the CUWCC MOU may submit its annual reports to support its DMM activities.	California American Water will submit its CUWCC BMP 2009-2010 activity report.
	10631.5(f)	*Added:* "This section" is in effect only until July 1, 2016, after which it is repealed, unless another statute is enacted.	No impact to this UWMP.
New DMM Independent Technical Panel	10631.7	*Added:* DWR, with the CUWCC, will convene a technical panel to provide information and recommendations to DWR and the Legislature on new DMMs, technologies, and approaches. There is further language on the panel members and timing.	No impact to this UWMP.
Potential Recycled Water Uses	10633(d)	*Added:* Indirect potable reuse is to be considered as an option for a potential use of recycled water.	No impact to this UWMP.
UWMP Distribution	10644(a)	*Added:* A copy of the UWMP will also be submitted to the California State Library no later than 30 days after its adoption.	California American Water will submit a copy of its adopted UWMP to the California State Library to meet this requirement.
Exemplary UWMP Elements	10644(b)	*Added:* 'Exemplary' elements of individual plans are to be identified in the 2011 Legislative Report	No impact to this UWMP.

Change	New/ Revised Water Code Section Number	Summary of Changes	UWMP Approach
Exemplary UWMP	10644(c)	*Added:* (1), (2), and (3). Clarifying that "exemplary" DMMs are those that achieve water saving significantly above the levels established by DWR to meet the requirements of 10631.7. The results are to be distributed to the panel convened pursuant to Section 10631.7 and the public.	No impact to this UWMP.
Retail Deadline	144644(j)(1)	*Added:* An urban retail water supplier is granted an extension to July 1, 2011, for adoption of an urban water management plan.	California American Water will make its best effort to adopt the plan in a timely manner.
Wholesaler Deadline	144644(j)(2)	*Added:* An urban wholesale water supplier whose urban water management plan … is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.	No impact to this UWMP.
	10657	*Deleted.*	No impact to this UWMP.

1.1 COORDINATION

California American Water coordinated with multiple neighboring and stakeholder agencies in the preparation of this UWMP. The coordination efforts were conducted to: 1) inform the agencies of California American Water activities; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by California American Water are summarized in Table 1-3.

California American Water is an investor owned utility (IOU) regulated by the California Public Utility Commission (CPUC). Therefore, its facilities, operations and financial structure (including customer rates) are subject to extensive regulation by the CPUC, as well as environmental, health, safety and water quality regulations by federal, state and local governments. The CPUC sets rules and regulates public utility companies in California. The intent of the regulations set by the CPUC is to ensure provision of high quality water service at a fair price. All increases in service rates are directly related to the cost of providing quality service and are subjected to a public review process and approval by the CPUC. Each of California American Water's individual systems is registered with separate operating permits with the California Department of Public Health (CDPH).

Table 1-3. Agency Coordination

Agency / Organization	Participated in developing the plan	Commented on the draft	Attended public meetings	Was contacted for assistance	Was sent a copy of the draft plan[1]	Was sent a notice of intention to adopt[2]	Was sent a copy of the final plan[1]
California Department of Water Resources (DWR)				X			X[3]
California Public Utilities Commission (CPUC)							X
The City of Coronado				X	X	X	X
The City of Imperial Beach			X		X	X	X
The City of Chula Vista					X		X
The City of San Diego	X			X	X	X	X
The County of San Diego					X	X	X
The San Diego County Water Authority (SDCWA)					X		X
Sweetwater Authority		X			X		X
Otay Water District					X		X
San Diego Association of Governments (SANDAG)				X			

[1] Sent a letter with a link to download an electronic copy of the plan.
[2] Due to an administrative oversight, the City of Chula Vista was not sent a letter of notification of preparation and intention to adopt 60 days prior to the public hearing. However, the City of Chula Vista was notified of the draft UWMP and invited to the public hearing two (2) weeks prior to the hearing.
[3] DWR was also sent a hardcopy and an electronic copy of the plan.

1.2 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

To fulfill the requirements of Water Code Section 10621(c), California American Water sent letters of notification of preparation of the 2010 UWMP to all cities and counties within its San Diego County District service areas 60 days prior to the public hearing.[1] Copies of the 60 day notification letters are attached as Appendix H.

To fulfill the requirements of Water Code Section 10642 of the UWMP Act, California American Water made the draft 2010 UWMP available for public review and held a public hearing on August 18, 2011. The public review hearing was noticed in the San Diego Union-Tribune on August 3, 2011 and August 10, 2011; the hearing notice is attached as Appendix C. California American Water sent letters of notification of the public hearing, with a link to download the draft UWMP, to the cities, counties, and wholesale agencies listed in Table 1-3 above; copies of the letters are included in Appendix C. In addition, California American Water has maintained a copy of the draft UWMP in its office from May 24, 2010 to September 30, 2010, and has had an electronic copy of the draft posted on the company's public website since July 22, 2011.

The Final 2010 Southern Division's San Diego County District UWMP was formally adopted by California American Water on January 9, 2012. A copy of the Adoption Resolution is included in Appendix G. A copy of the Final 2010 Southern Division's San Diego County District UWMP was sent to the California State Library, DWR, and all cities and counties within California American Water's San Diego County District service area on February 7, 2012. California American Water made the 2010 UWMP available for public review on its website and in its office during normal hours.

1.2.1 Implementation of the 2010 UWMP

The implementation of this plan shall be carried out as described unless significant changes occur between the adoption of this plan and the 2015 plan. If such significant changes do occur, California American Water will amend and readopt the plan as required by the California Water Code. For more information on implementation of specific sections of this plan see sections 1.2.2 and 1.2.3.

1.2.2 Implementation of the Recycled Water Plan

California American Water does not currently receive recycled water and does not distribute recycled water within its San Diego County District. Currently, there are no plans to implement any recycled water programs within the timeline of this plan (by 2015).

[1] Sixty (60) days prior to the public hearing, CAW sent letters of notification of preparation and intention to adopt the UWMP to: the City of Coronado, City of Imperial Beach, City of San Diego, and County of San Diego. Due to an administrative oversight, the City of Chula Vista was not sent a letter of notification 60 days prior to the public hearing. However, the City of Chula Vista was notified of the draft UWMP and invited to the public hearing two (2) weeks prior to the hearing.

1.2.3 Implementation of the Conservation Best Management Practices

California American Water is a member of the California Urban Water Conservation Council (CUWCC) and is a signatory to the CUWCC Memorandum of Understanding (CUWCC MOU). The CUWCC MOU outlines 14 Best Management Practices (BMPs) that correspond with the 14 Demand Management Measures (DMM) outlined in the UWMP Act. The UWMP Act allows CUWCC members to submit their CUWCC BMP reports in lieu of completing a DMM section if the member is in full compliance with the BMPs. The District is a CUWCC member but it is not known if the District is in full compliance since the District has not yet received indication from CUWCC. To ensure the District complies with the UWMP Act, a DMM section is included. In the previous UWMP both a DMM section and BMP report were included. This plan contains a DMM section (see Section 6) and BMP report (see Appendix D) as well.

The evaluation of BMPs provides guidance for internal development of California American Water's conservation programs and is used as testimony and support documentation for rate cases required by the CPUC. California American Water is working towards achieving full compliance with the CUWCC BMPs. Therefore, the BMP report is attached in Appendix D. The BMPs listed in the previous UWMP are being implemented as planned or exceed the planned implementation. The implementation of any of the described programs and costs are contingent on the CPUC approval of programs and their budget funding, as well as incorporation in the American Water Business Plan.

2 SYSTEM DESCRIPTION

California American Water is a wholly-owned subsidiary of the American Water Works Company (American Water), one of the largest investor-owned water and wastewater utility companies in the United States. American Water is headquartered in Voorhees, New Jersey, and California American Water is headquartered in Coronado, CA. California American Water was incorporated into American Water under California law in 1966 when American Water acquired California Water and Telephone.

California American Water is operated by three Division Offices: the Northern Division; Central Division; and Southern Division. The Southern Division includes the San Diego County District, the Los Angeles County District, and the Ventura County District. Each district within the Southern Division has a separate UWMP. This UWMP covers the San Diego County District. Figure 2-1 shows the areas covered in this UWMP.

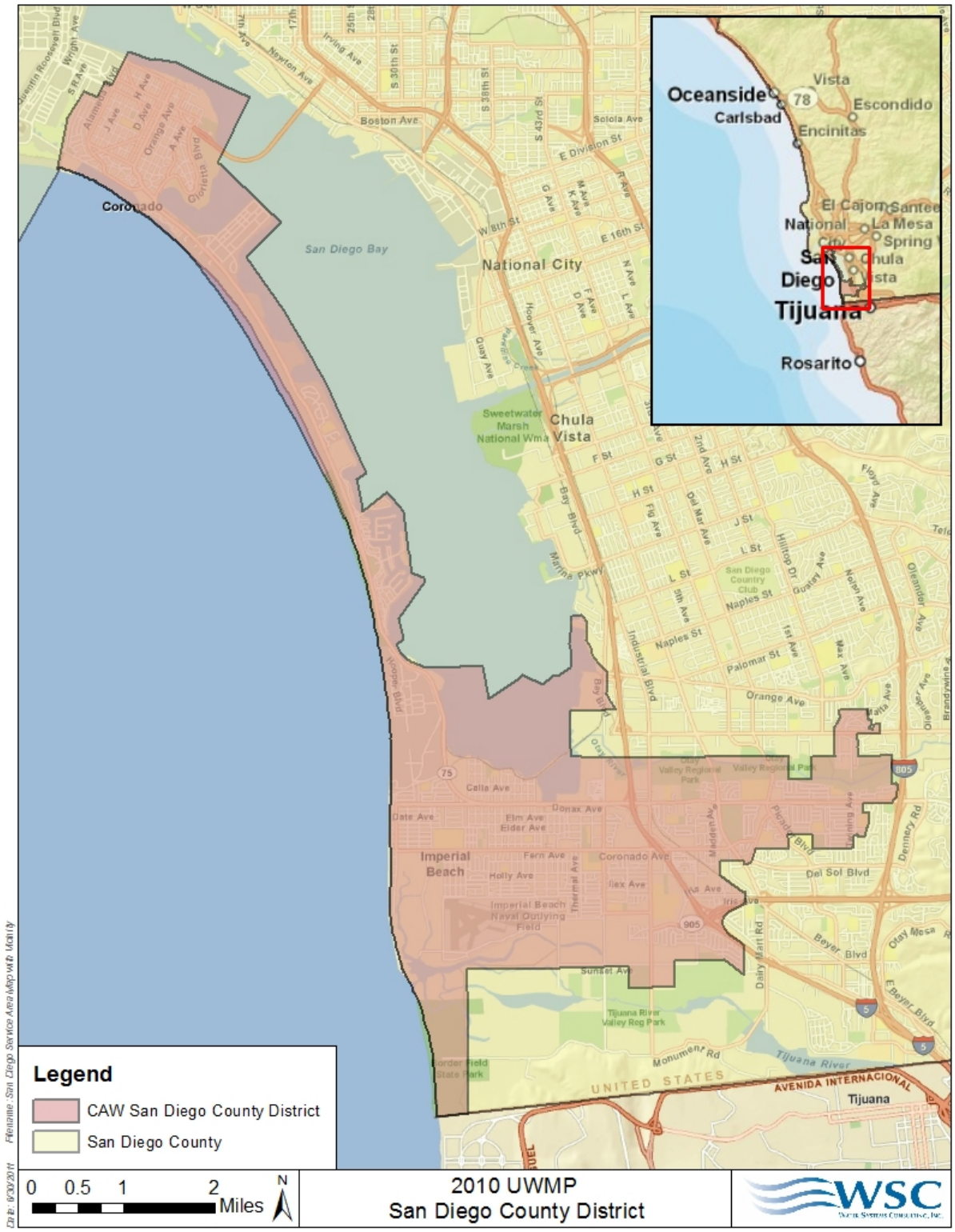


Figure 2-1. San Diego County District

2.1 SERVICE AREA PHYSICAL DESCRIPTION

California American Water's San Diego County District serves the City of Coronado (excluding the North Island Naval Air Station), the City of Imperial Beach, a section of the City of San Diego located south of San Diego Bay, and a small portion of the City of Chula Vista, as shown in Figure 2-1. All areas served are in the southern part of San Diego County, California. The District encompasses approximately 11,962 acres and is generally flat and highly urbanized. The areas served are accessed by Interstate Highways 5 and 805. The Coronado peninsula is accessed by the San Diego-Coronado Bay Bridge or by Route 75 (also known as the Silver Strand). California American water serves a population of approximately 95,359[2] in the San Diego County District.

2.1.1 Climate

The climate of the San Diego County District is characterized as semi-arid Mediterranean with warm summers and mild winters. The Pacific Ocean borders the District on the west; thus, the District's climate is largely influenced by the Pacific Ocean, which results in small daily and seasonal temperature ranges. The Western Regional Climate Center maintains a weather station in Chula Vista, which gives data representative of the area. The average annual temperature in Chula Vista is 60.8°F. The warmest months of the year are July through September, with an average temperature of 68.3°F for the three-month period. The coolest months of the year are December through February, with an average temperature of 54.6°F.

The average annual precipitation in Chula Vista is 9.75 inches per year, almost all of which is in the form of rainfall. (The historical record shows a few incidences of snowfall in December). About 89% of the rainfall occurs from November through April.

The evapotranspiration rate is highest in July and August and lowest in December and January. Detailed average monthly precipitation, temperature and evapotranspiration data for Chula Vista can be found in Table 2-1 and Table 2-2.

[2] The population of the District in 2010 was estimated to be 95,359 based on the 2010 Census.

Table 2-1. Average Precipitation, Temperature and Evapotranspiration between January and June in Chula Vista

Climate Parameter	January	February	March	April	May	June
Average Rainfall, in[1]	1.78	1.92	1.61	0.82	0.21	0.05
Average Temperature, °F[1]	54.0	55.1	56.5	58.7	61.6	64.0
Average ETo, in[2]	2.07	2.42	3.44	4.61	5.07	5.33

[1]Data derived from Western Regional Climate Center, Station:(041758) Chula Vista 1918-2010, http://www.wrcc.dri.edu/CLIMATEDATA.html

[2]Data derived from California Irrigation Management Information System (CIMIS), Monthly Average ETo Report, Station 184 (San Diego II), 2002-2010, http://wwwcimis.water.ca.gov/cimis/data.jsp

Table 2-2. Average Precipitation, Temperature, and Evapotranspiration between July and December in Chula Vista

Climate Parameter	July	August	September	October	November	December
Average Rainfall, in[1]	0.02	0.06	0.17	0.51	0.95	1.64
Average Temperature, °F[1]	67.8	69.2	67.8	63.7	58.7	54.8
Average ETo, in[2]	5.66	5.59	4.33	3.56	2.39	2.03

[1]Data derived from Western Regional Climate Center, Station:(041758) Chula Vista 1918-2010, http://www.wrcc.dri.edu/CLIMATEDATA.html

[2]Data derived from California Irrigation Management Information System (CIMIS), Monthly Average ETo Report, Station 184 (San Diego II), 2002-2010, http://wwwcimis.water.ca.gov/cimis/data.jsp

The weather data for Chula Vista describes the climate of the area being served, but not the climate of where the water supply for the District originates. All of the San Diego County District's water supply is purchased from the City of San Diego, and thus the reliability of their supply directly impacts the reliability of the San Diego County District's supply. The discussion of the dry year and multiple dry year scenarios are aligned with that of the City of San Diego and are discussed in Section 5.

2.2 SERVICE AREA POPULATION

The population served by the Southern Division's San Diego County District was estimated to be 95,359 in 2010. The areas served are largely built out; hence population growth is expected to be slow. Most growth is expected to come from redevelopment and construction of higher occupancy housing, such as apartments or townhomes, and a reduction in vacancy of existing units (3). Using data from the San Diego Association of Governments (SANDAG), the annual population growth for the San Diego County District is projected to remain under 1% through 2030, as shown in Table 2-3 (4).

Table 2-3. San Diego County District Projected Growth Rates (4)

	2008-2015	2016-2020	2021-2025	2026-2030
Annual Compound Growth Rates[1]	0.31%	0.41%	0.33%	0.68%

[1] Growth rates were calculated from SANDAG population projection data.

Table 2-4 and Figure 2-2 show the past, current, and projected future population of the San Diego County District. The population for the years 2000 and 2010 were obtained from the 2000 Census and 2010 Census, respectively. The population for 2005 is assumed to be the average of the 2000 and 2010 population. For years after 2010, population was estimated using the population from the 2010 Census and growth rates from SANDAG's population projections. Appendix F provides additional detail regarding the methodology used to establish population projections.

Table 2-4. Population- Past, Current, and Projected

	2005	2010	2015	2020	2025	2030
San Diego County District	96,608	95,359	96,830	98,845	100,503	103,974

[1] The 2000 and 2010 Census were used to calculate the 2005 population. The 2010 population is calculated from the 2010 Census. The 2010 Census and the growth rates calculated from SANDAG data were used to calculate the population for 2015, 2020, 2025 and 2030.

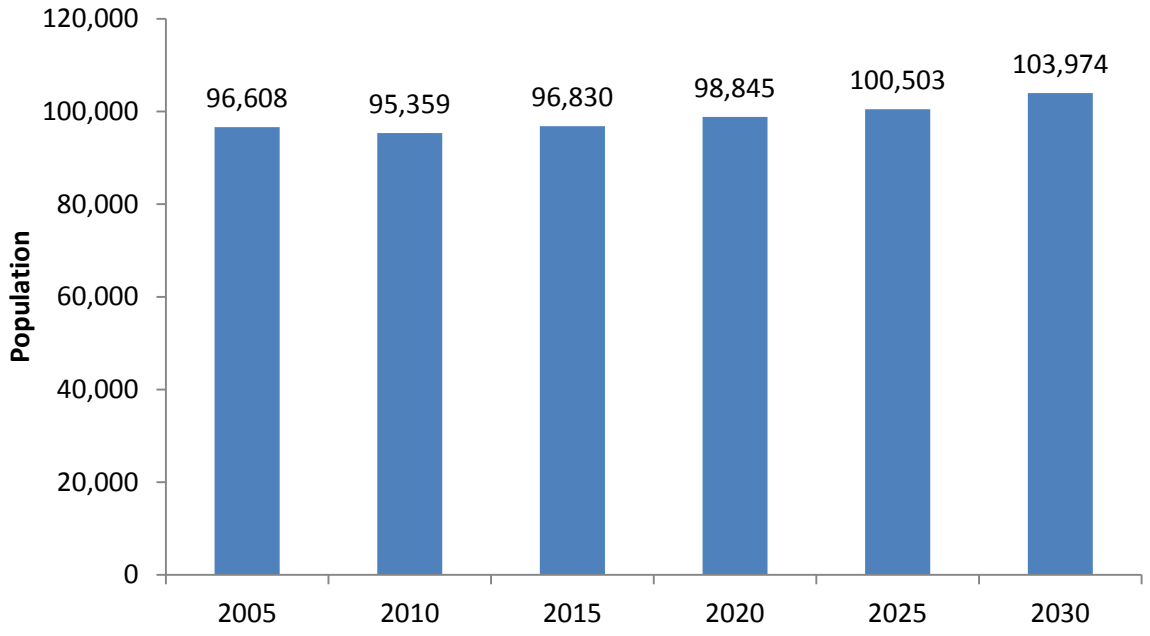


Figure 2-2. Historical, Current, and Projected Population of the San Diego County District

3 SYSTEM DEMANDS

The methodology for developing demand projections is included in Appendix F. Demand projections incorporate ongoing and future water conservation efforts to reflect a reduced per capita usage as required by SB7. Appendix A describes the methodology used to develop the SB7 baseline and targets in detail.

3.1 BASELINE AND TARGETS

The calculation of SB7 baseline and target per capita water use is discussed in detail in Appendix A. Table 3-1 shows the baseline, 2010 actual use (compliance), interim target, and target per capita water use for the San Diego County District.

Table 3-1. Baseline, Compliance, Interim Target, and Target Per Capita Water Use (Appendix A)

Parameter	Water Use (gpcd)
Baseline Daily Per Capita Water Use	121
2010 Daily Per Capita Water Use	105
2015 Interim Urban Water Use Target	118
2020 Urban Water Use Target	116

As seen in Table 3-1, the District's per capita water use in 2010 was significantly below the District's calculated 2015 interim target and 2020 target. The steady decline in per capita water use from 2006 through 2010 is attributed to a combination of transitory factors such as the weak economy and hydrologic conditions, and structural changes in customer demand patterns associated with effective conservation programs. The City of San Diego implemented a Level 2 Drought Alert with mandatory water use restrictions in June 2009, which has remained in effect to-date (5). Mandatory water restrictions by the City of San Diego affect water use in the District and likely played a role in the low water use recorded in the District in 2009 and 2010. For the purposes of projecting District-wide water use, WSC set the 2011 per capita water use to match the 10-year baseline (shown in Table 3-1). The per capita water use between 2011 and 2015 was linearly interpolated to meet the 2015 interim target. The per capita water use between 2015 and 2020 was linearly interpolated to meet the 2020 target. Figure 3-1 displays the baseline and targets as well as historical and projected per capita water use.

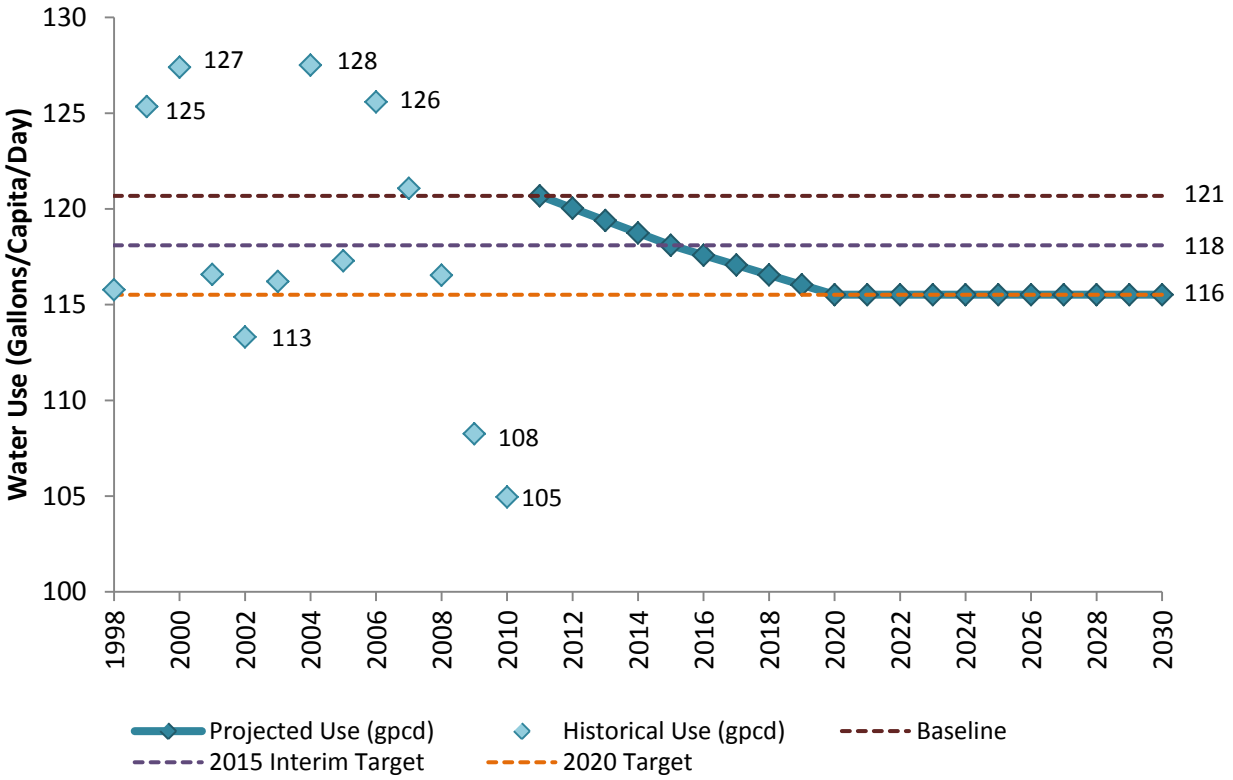


Figure 3-1. Per Capita Water Use- Historical, Projected, Baseline and Targets

3.2 WATER DEMANDS

The following tables (Table 3-2 through Table 3-6) show the past, current, and projected demands. The methodology for demand projections is outlined in Appendix F. Figure 3-2 shows the past, current, and projected water deliveries for the District.

Table 3-2. San Diego County District Deliveries 2005, Volume in afy

	2005[1]				
	Metered		Not Metered		Total
Water use sectors	# of Connections	Volume	# of Connections	Volume	Volume
Single family	17,768	5,963	0	0	5,963
Multi-family	1,415	2,780	0	0	2,780
Commercial	636	1,135	0	0	1,135
Industrial	0	0	0	0	0
Institutional/ governmental	250	1,198	0	0	1,198
Landscape	443	1,362	0	0	1,362
Agriculture	0	0	0	0	0
Other[2]	185	33	0	0	33
Total	**20,698**	**12,471**	**0**	**0**	**12,471**

[1] 2005 connections and delivery data were derived from the 2005 CAW customer database and the 2005 CAW Operating Report.
[2] Other includes private fire connections and seasonal connections.

Table 3-3. San Diego County District Deliveries 2010, Volume in afy

	2010[1]				
	Metered		Not Metered		Total
Water use sectors	# of Connections	Volume	# of Connections	Volume	Volume
Single family	18,138	5,179	0	0	5,179
Multi-family	1,339	2,549	0	0	2,549
Commercial	609	952	0	0	952
Industrial	0	0	0	0	0
Institutional/ governmental	207	1,091	0	0	1,091
Landscape	386	963	0	0	963
Agriculture	0	0	0	0	0
Other[2]	223	3	0	0	3
Total	**20,903**	**10,737**	**0**	**0**	**10,737**

[1] 2010 connections and delivery data were derived from the 2010 CAW customer database and the 2010 CAW Operating Report.
[2] Other includes private fire connections and seasonal connections.

Table 3-4. San Diego County District Deliveries 2015, Volume in afy

	2015				
	Metered		Not Metered		Total
Water use sectors	# of Connections	Volume	# of Connections	Volume	Volume
Single family	18,418	5,963	0	0	5,963
Multi-family	1,360	2,936	0	0	2,936
Commercial	619	1,096	0	0	1,096
Industrial	0	0	0	0	0
Institutional/ governmental	211	1,256	0	0	1,256
Landscape	392	1,109	0	0	1,109
Agriculture	0	0	0	0	0
Other[1]	226	3	0	0	3
Total	**21,225**	**12,364**	**0**	**0**	**12,364**

[1] Other includes private fire connections and seasonal connections.

Table 3-5. San Diego County District Deliveries 2020, Volume in afy

	2020				
	Metered		Not Metered		Total
Water use sectors	# of Connections	Volume	# of Connections	Volume	Volume
Single family	18,801	5,954	0	0	5,954
Multi-family	1,388	2,931	0	0	2,931
Commercial	632	1,094	0	0	1,094
Industrial	0	0	0	0	0
Institutional/ governmental	215	1,254	0	0	1,254
Landscape	400	1,108	0	0	1,108
Agriculture	0	0	0	0	0
Other[1]	231	3	0	0	3
Total	**21,667**	**12,344**	**0**	**0**	**12,344**

[1] Other includes private fire connections and seasonal connections.

Table 3-6. San Diego County District Deliveries 2025 & 2030, Volume in afy

	2025		2030	
	Metered		Metered	
Water use sectors	# of Connections	Volume	# of Connections	Volume
Single family	19,117	6,057	19,777	6,274
Multi-family	1,411	2,982	1,460	3,089
Commercial	642	1,113	664	1,153
Industrial	0	0	0	0
Institutional/ governmental	219	1,276	226	1,321
Landscape	407	1,127	421	1,167
Agriculture	0	0	0	0
Other[1]	235	4	243	4
Total	**22,031**	**12,559**	**22,791**	**13,008**

[1] Other includes private fire connections and seasonal connections.

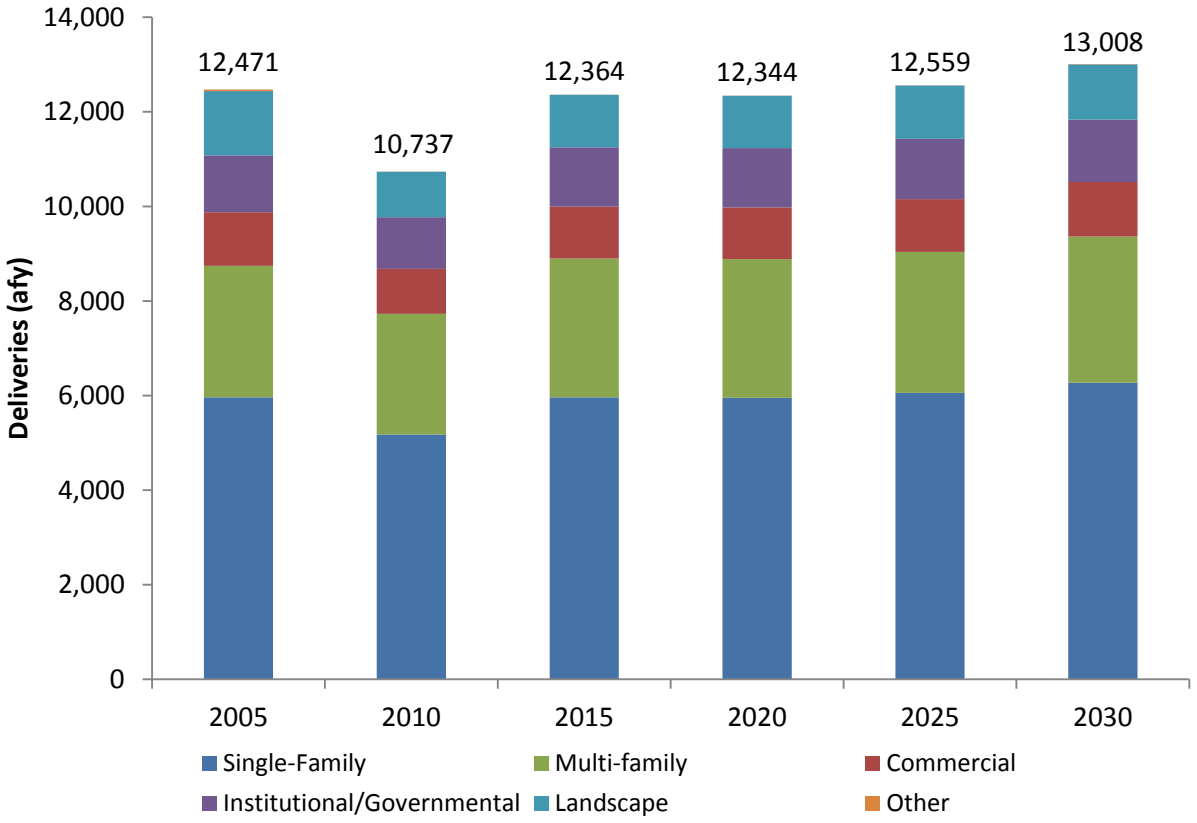


Figure 3-2. Past, Current, and Projected Deliveries

3.2.1 Low-Income Demands

Changes to the California Water Code section 10631.1 since 2005 require demand projections to include projected water use for single-family and multi-family residential housing needed for lower income households. Low-income households are defined as households making less than 80% of median household income. The assumed percentage of existing low-income households is approximately 38% of households in San Diego County (6). SANDAG has been notified by the California Department of Housing and Community Development that 64,150 new low income units will be needed in San Diego County from January 1, 2010, through December 31, 2020 (11 years) (7). The projected number of units that need to be built for lower income households by jurisdiction for 2010 through 2020 has not yet been finalized by SANDAG. Thus, the percentage of the County of San Diego's total area that is served by California American Water was applied to the County's total number of projected units to determine the number of those that will be served by California American Water. Based on this analysis, approximately 285 new low-income units will be needed in California American Water's service area from 2010 through 2020, which is equivalent to 26 new low-income units annually.

Once the number of projected low-income units was established, the number of single-family and multi-family units was calculated by applying the percentage of existing single-family and multi-family residential connections within the San Diego County District. The amount of water used per connection was estimated based on historical connection and delivery data for 2010 (shown in Table 3-3) and projected connection and delivery data for years after 2010 (shown in Table 3-4 through Table 3-6). Linear interpolation was used to estimate the amount of water per connection for years not ending in 0 or 5. Table 3-7 and Table 3-8 show the portion of the total demand that is assumed to be for new low-income households. All demand for low-income households is included in the total demand projections presented previously.

Table 3-7. San Diego County District Water Demands for New Low-Income Households for 2010-2015, afy

Low-income Water Demands	2010	2011	2012	2013	2014	2015
Single-family residential	6.90	7.09	7.27	7.46	7.64	7.83
Multi-family residential	3.40	3.49	3.58	3.67	3.76	3.85
Incremental Total[1]	**10.30**	**10.57**	**10.85**	**11.13**	**11.40**	**11.68**
Cumulative Total[2]	**10.30**	**20.87**	**31.72**	**42.85**	**54.25**	**65.93**

[1] Low-income demand added each year due to new low-income units.
[2] Cumulative total low-income demand for new low-income units added since 2010.

Table 3-8. San Diego County District Water Demands for New Low-Income Households for 2016-2020, afy

Low-income Water Demands	2016	2017	2018	2019	2020
Single-family residential	7.79	7.76	7.72	7.69	7.65
Multi-family residential	3.84	3.82	3.80	3.78	3.77
Incremental Total[1]	**11.63**	**11.58**	**11.52**	**11.47**	**11.42**
Cumulative Total[2]	**77.55**	**89.13**	**100.65**	**112.13**	**123.55**

[1] Low-income demand added each year due to new low-income units.
[2] Cumulative total low-income demand for new low-income units added since 2010.

3.2.2 Sales to Other Water Agencies

Although CAW has an emergency connection to the North Island Naval Air Station to deliver water in emergencies, CAW does not have any contracts to sell water to other agencies as a wholesaler. Additionally, CAW does not plan to sell water to other agencies in the future. Table 3-9 shows the historical, current, and projected amounts of water provided to other agencies.

Table 3-9. San Diego County District Sales to Other Water Agencies, afy

Water distributed	2005	2010	2015	2020	2025	2030
N/A	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**

3.2.3 Additional Water Uses and Losses

Table 3-10 shows the past, current and projected amount of non-revenue water (NRW) for the San Diego County District. NRW is defined as the water losses plus authorized unbilled (metered and unmetered) water consumption (8). In the San Diego County District, there is authorized unbilled unmetered consumption. For the purposes of this plan, WSC set NRW as the difference between the amount of water the District purchases from the City of San Diego and the amount of billed customer deliveries in the District.

The District used the American Water Works Association (AWWA) Free Water Audit Software in 2010 to perform a water audit of the District for the one year period beginning March 2009 and ending February 2010. The AWWA Water Audit results showed that NRW in the District is 145.390 MG, which is equivalent to 446 AFY (9). Therefore, NRW is projected to be approximately 446 AFY going forward (2011-2030).

For the year 2010, actual data was available from the District's operating reports. Based on the District's operating report for 2010, the District had approximately 474 AF of NRW in 2010; this value is used as the NRW for 2010. Table 3-10 shows the NRW for the San Diego County District.

Table 3-10. San Diego County District Non-Revenue Water, afy

Water use	2005	2010	2015	2020	2025	2030
Non-revenue water (NRW)	222	474	446	446	446	446
Total	**222**	**474**	**446**	**446**	**446**	**446**

3.2.4 Total Water Use

Table 3-11 shows the past, current, and projected total water use for the San Diego County District. Total water use includes water delivered to customers, water sold to other agencies, and non-revenue water.

Table 3-11. Total Water Use, afy

Water Use	2005	2010	2015	2020	2025	2030
Total water deliveries	12,471	10,737	12,364	12,344	12,559	13,008
Sales to other water agencies	0	0	0	0	0	0
Non-revenue water (NRW)	222	474	446	446	446	446
Total	**12,693**	**11,211**	**12,810**	**12,790**	**13,005**	**13,454**

3.3 WHOLESALE WATER DEMAND

CAW's San Diego County District purchases all of its water from the City of San Diego. Table 3-12 shows the amount of water projected to be purchased from the City of San Diego provided that the full supply from the City is available per the requirements of the contract. The District provided the City with the District's wholesale demand projections; a copy of the letter is included in Appendix I.

Table 3-12. Demand Projections Provided to Wholesale Suppliers, afy

Wholesaler	2010	2015	2020	2025	2030
City of San Diego	**11,211**	**12,810**	**12,790**	**13,005**	**13,454**

3.4 WATER USE REDUCTION PLAN

In response to multiple group affiliations, MOUs, statutory requirements, and concern for the region's water supply sustainability, California American Water employs multiple tactics to conserve water. The major tactics currently being implemented by California American Water include conservation measures, CUWCC Best Management Practices (BMPs) implementation, and conservation rate structures. All of these tactics are currently being implemented or are in the process of being implemented in the near future. The projected demand incorporates all of these conservation influences.

The District expects to achieve the per capita water use targets through continued implementation of CUWCC Best Management Practices (BMPs), participation in regional conservation campaigns, and utilization of recycled water for non-potable needs.

(1) BMPs: The District will continue to implement BMPs according to the CUWCC MOU. When in full compliance, the District is expected to meet its 2020 per capita water use target. Refer to Section 6 for a detailed discussion of the District's BMPs. A copy of the 2009 BMP Annual Report is included in Appendix D.

(2) Regional Conservation Campaigns: The District benefits from conservation efforts carried out by the City of San Diego and SDCWA. The City of San Diego's campaign, "No Time to Waste, No Water to Waste," educates the public on water conservation and on water restrictions in the City's service area during drought periods (5). The City has extended this campaign into the District's service area. Additionally, the District's customers are exposed to the campaign through the City's media outreach efforts, which include public awareness events, advertising, and public service announcements. More discussion on the City's public outreach efforts are discussed in Section 6 of this UWMP and Section 5 of the City's 2010 UWMP (5). SDCWA is conducting regional outreach, including their recently branded regional conservation campaign, WaterSmart. The goal of the WaterSmart program is to demonstrate that attractive landscaping can be achieved with reduced water use (10). More details on SDCWA's regional conservation efforts can be found in Section 3 of SDCWA's 2010 UWMP (10).

(3) Recycled Water Projects: Implementing recycled water projects in the District will allow the District to reduce potable demand and assist the District in reaching the per capita water use target. Recycled water uses and projects are described in Section 4.6.3.

Through the combined effect of the efforts listed above, the District is expected to achieve their per capita water use reduction targets.

4 SYSTEM SUPPLIES

4.1 WATER SOURCES

All of the San Diego County District's water is purchased from the City of San Diego. Figure 4-1 illustrates how the water gets from its origin to the District.

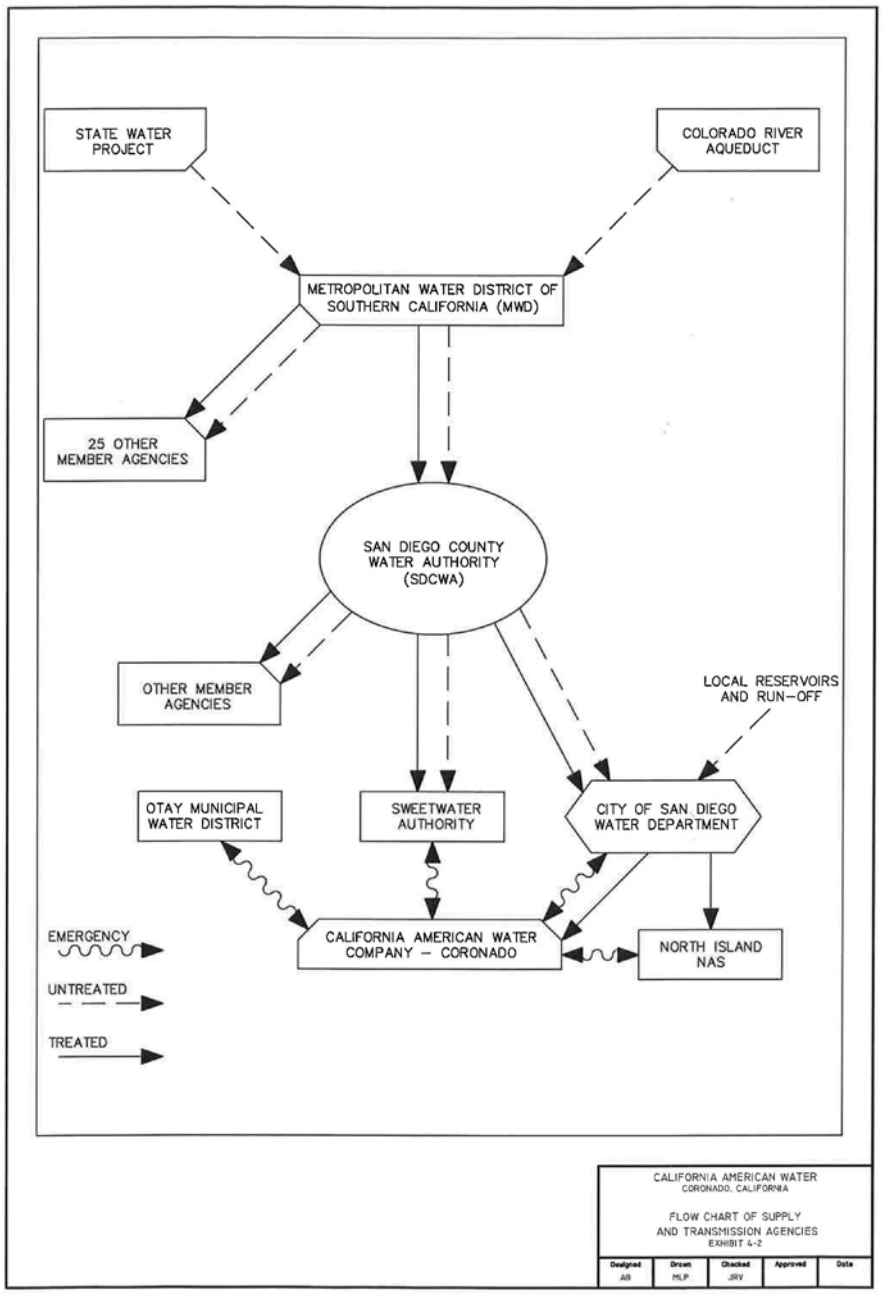


Figure 4-1. Water Supply Flow Chart (3)

The following sections describe the key water agencies shown in Figure 4-1, in the same order as the flow chart (beginning with MWD and ending with California American Water's San Diego County District).

4.1.1 Metropolitan Water District of Southern California (MWD)

MWD is a public agency that serves wholesale water supplies the Southern California coastal plain, from Oxnard in the north to the U.S.-Mexico border in the south, as shown in Figure 4-2. MWD's total service area is approximately 5,200 square miles. MWD has 26 member agencies, the largest of which is the San Diego County Water Authority (SDCWA). MWD is a water wholesaler, providing both treated and untreated water to its member agencies. MWD does not have any retail customers (11).

MWD currently receives imported water from two sources: (1) the Colorado River via the Colorado River Aqueduct (CRA), and (2) the State Water Project (SWP) via the California Aqueduct (11). The planned sources of supply for MWD for 2010-2030 assuming a normal water year are shown in Table 4-1 and Table 4-2.

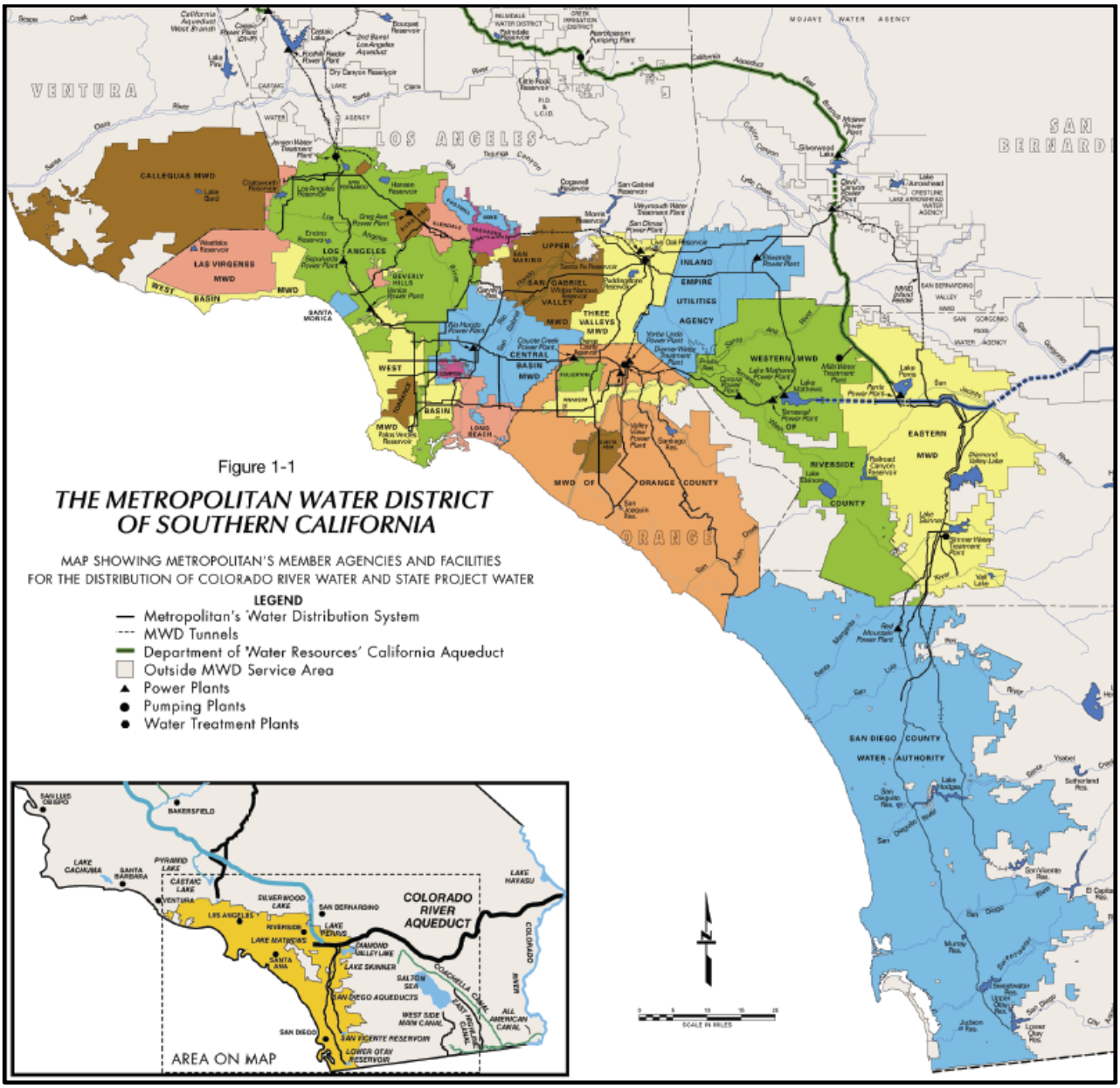


Figure 4-2. MWD Service Area (11)

Table 4-1. MWD Planned Sources of Supply for 2010-2020

Supply Source	2010[1]		2015[2]		2020[2]	
	afy	% of Total	afy	% of Total	afy	% of Total
SWP	1,772,000	71%	1,550,000	44%	1,629,000	43%
CRA	711,000	29%	1,250,000	36%	1,250,000	33%
In-Region Storage and Programs	0	0%	685,000	20%	931,000	24%
Total	**2,483,000**	**100%**	**3,485,000**	**100%**	**3,810,000**	**100%**

[1] Source: 2005 MWD Regional UWMP (12)
[2] Source: 2010 MWD Regional UWMP (11)

Table 4-2. MWD Planned Sources of Supply for 2025-2030

Supply Source	2025[1]		2030[1]	
	afy	% of Total	afy	% of Total
SWP	1,763,000	43%	1,733,000	44%
CRA	1,250,000	31%	1,250,000	32%
In-Region Storage and Programs	1,076,000	26%	964,000	24%
Total	**4,089,000**	**100%**	**3,947,000**	**100%**

[1] Souce: 2010 MWD Regional UWMP (11)

4.1.2 San Diego County Water Authority (SDCWA)

SDCWA is a public agency that serves the San Diego region, from Orange and Riverside counties in the north to the U.S.-Mexico border in the south, as shown in Figure 4-3. The total service area is approximately 1,438 square miles. SDCWA has 23 member agencies, the largest of which is the City of San Diego. SDCWA is a water wholesaler; member agencies purchase water from SDCWA and distribute it within their service areas. SDCWA is the main water supplier in San Diego county, supplying between 75% and 90% of the area's needs depending on weather conditions and yields from local supplies (13).

SDCWA purchases water from MWD and the Imperial Irrigation District (IID) and delivers water to its members through large pipelines located in two north-south aqueducts (10). SDCWA also has several east-west pipelines that extend into member agency service areas (10).

Additionally, SDCWA has rights to conserved water from projects that lined the All-American Canal (AAC) and the Coachella Canal (CC). The planned sources of supply for SDCWA for 2010-2030 assuming a normal water year are shown in Table 4-3 and Table 4-4.

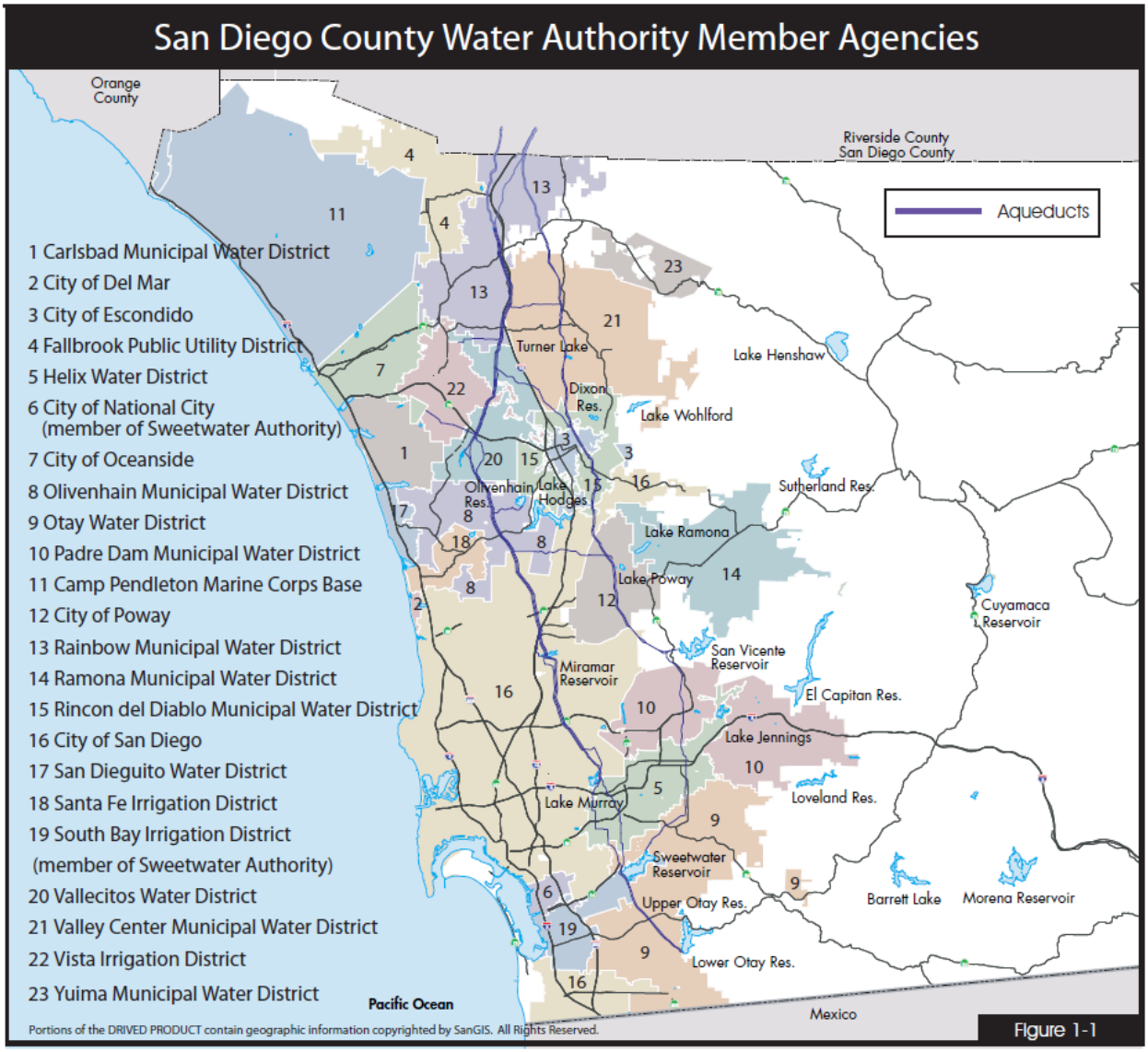


Figure 4-3. SDCWA Service Area (13)

Table 4-3. SDCWA Planned Sources of Supply for 2010-2020

Supply Source	2010[1]		2015[2]		2020[2]	
	afy	% of Total	afy	% of Total[3]	afy	% of Total
MWD (Purchased)	445,858	62%	357,159	55%	229,636	34%
IID (Transfer)	70,000	10%	100,000	15%	190,000	28%
AAC and CC Lining Projects	77,700	11%	80,200	12%	80,200	12%
Proposed Regional Seawater Desalination	0	0%	0	0%	56,000	8%
Member Agency Supplies	121,892	17%	108,896	17%	118,288	18%
Total	**715,450**	**100%**	**646,255**	**100%**	**674,124**	**100%**

[1] Source: 2005 SDCWA UWMP (13)
[2] Source: 2010 SDCWA UWMP (10)
[3] Percentages may not add to 100 due to rounding.

Table 4-4. SDCWA Planned Sources of Supply for 2025-2030

Supply Source	2025[1]		2030[1]	
	afy	% of Total	afy	% of Total
MWD (Purchased)	258,782	36%	292,381	39%
IID (Transfer)	200,000	28%	200,000	27%
AAC and CC Lining Projects	80,200	11%	80,200	11%
Proposed Regional Seawater Desalination	56,000	8%	56,000	7%
Member Agency Supplies	122,101	17%	124,180	16%
Total	**717,083**	**100%**	**752,761**	**100%**

[1] Source: 2010 SDCWA UWMP (10)

4.1.3 City of San Diego

The City of San Diego's Water Department operates the City's public water system to treat and deliver water. The City's service area is in the south central part of San Diego County and encompasses approximately 330 square miles, as shown in Figure 4-4. The City sells water both to retail customers and to other water agencies, including California American Water, for retail distribution within their service areas (14).

The City's supply is largely made up of imported water purchased from SDCWA and MWD. Imported water accounts for up to 90% of the City's supply (14). The City purchases both raw water and treated water. The City treats the raw water at three treatment plants (Miramar, Alvarado, and Otay) (3). In addition, the City's system has nine local surface water reservoirs to capture rainwater and runoff, which constitute up to 20% of the City's supply (14). The planned sources of supply for the City of San Diego for 2010-2030 are shown in Table 4-5 and Table 4-6.

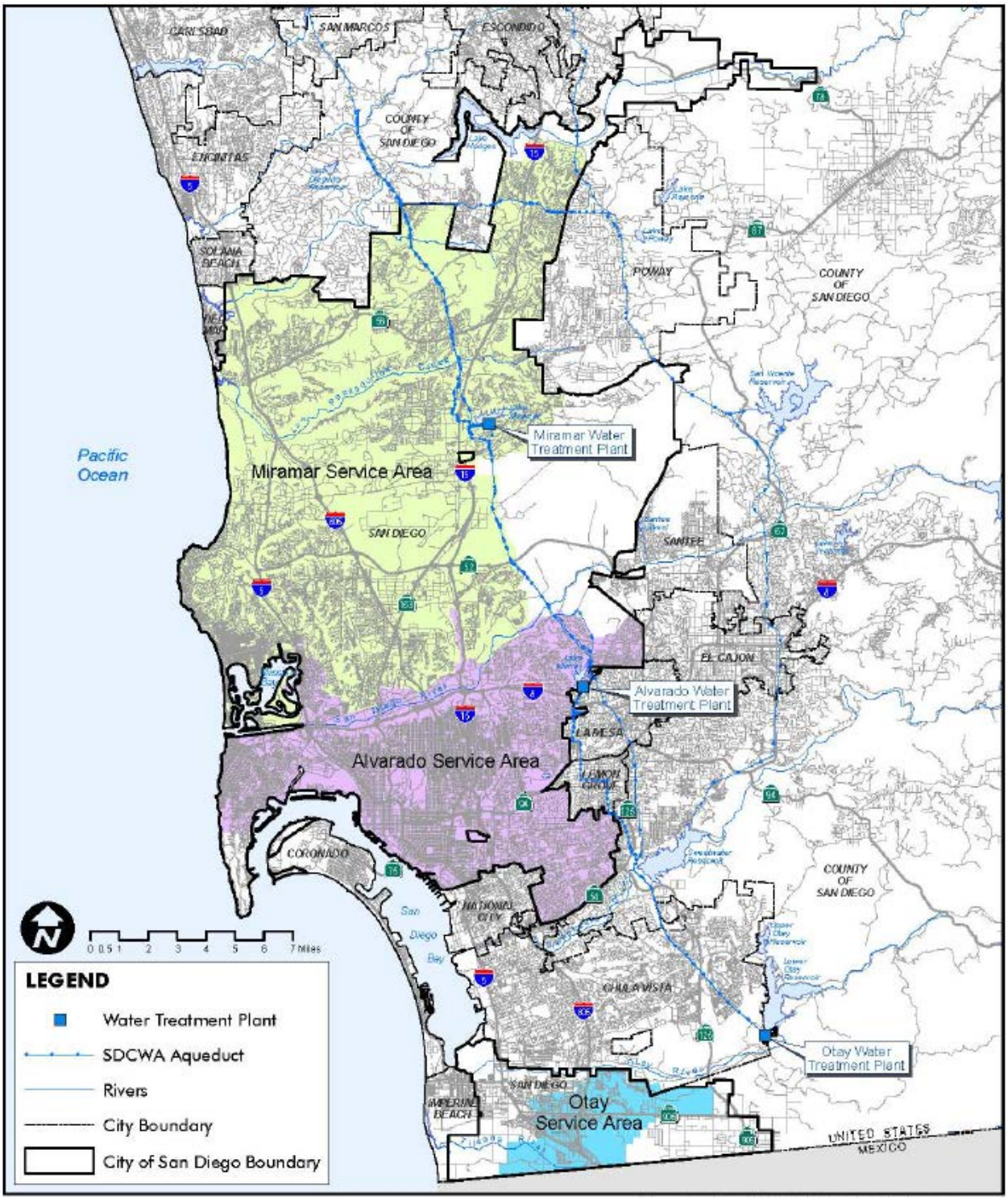


Figure 4-4. City of San Diego Service Area (5)

Table 4-5. City of San Diego Planned Sources of Supply for 2010-2020

Supply Source	2010[1]		2015[2]		2020[2]	
	afy	% of Total	afy	% of Total[3]	afy	% of Total[3]
SDCWA (Purchased)	201,901	84%	201,719	84%	221,458	85%
Local Surface Water	29,000	12%	29,000	12%	29,000	11%
Groundwater	0	0%	500	0.2%	500	0.2%
Recycled Water	8,525	4%	9,253	4%	9,253	4%
Total	**239,426**	**100%**	**240,472**	**100%**	**260,211**	**100%**

[1] Source: 2005 City of San Diego UWMP (14)
[2] Source: 2010 City of San Diego UWMP (5)
[3] Percentages may not add to 100 due to rounding.

Table 4-6. City of San Diego Planned Sources of Supply for 2025-2030

Supply Source	2025[1]		2030[1]	
	afy	% of Total[2]	afy	% of Total[2]
SDCWA (Purchased)	237,622	86%	249,728	87%
Local Surface Water	29,000	10%	29,000	10%
Groundwater	500	0.2%	500	0.2%
Recycled Water	9,253	3%	9,253	3%
Total	**276,375**	**100%**	**288,481**	**100%**

[1] Source: 2010 City of San Diego UWMP (5)
[2] Percentages may not add to 100 due to rounding.

4.1.4 California American Water's San Diego County District

California American Water's San Diego County District purchases all of its water supply from the City of San Diego. The water is received from the City of San Diego through four primary connections and one standby connection (3). The connections and average percent of the supply that enters the District's system through each connection are shown in Table 4-7. The location of each connection is shown in Figure 4-5.

Table 4-7. Purchased Water Connections with the City of San Diego

Location	Percent of Supply in 2010[2]
Harbor Drive	33%
Howard & Iris	16%
Montgomery	50%
Pueblo Del Rio	1%
Other[1]	< 1%
Total	100%

[1]Other sources include standby connection at Hollister St. and emergency connections with Otay WD and Sweetwater Authority.
[2]From 2010 system delivery provided by California American Water.

The San Diego County District entered a new Water Purchase contract with the City of San Diego on May 11, 2004 (15). The length of the contract is 25 years. The contract contains methodology for calculating minimum contract amount of water to be purchased and maximum contract amount of water available for purchase:

(1) **Minimum Contract Amount:** The minimum contract amount of water required to be purchased is 60% of the average system delivery per customer per day, where the average system delivery per customer per day is calculated at the beginning of each fiscal year based upon the prior 24 months ending June 30 (15). The minimum contract amount is required to be met on an annual basis.

(2) **Maximum Contract Amount:** The maximum amount of water available for purchase is 120% of the average system delivery per customer per day, where the average system delivery per customer per day is calculated at the beginning of each fiscal year based upon the prior 24 months ending June 30 (15). The maximum contract amount is an annual limit.

If the City of San Diego has water available, the City of San Diego may agree to sell more than the maximum contract amount to the San Diego County District (15).

Deliveries of water from the City of San Diego to the San Diego County District are subject to reduction in the same proportion as the City of San Diego is reducing deliveries to other city customers (15).

As shown in Figure 4-1, the San Diego County District also has three emergency interconnections, one with each of the following: Otay Water District (Otay WD), Sweetwater Authority and North Island Naval Air Station. Figure 4-5 shows the location of each emergency connection.

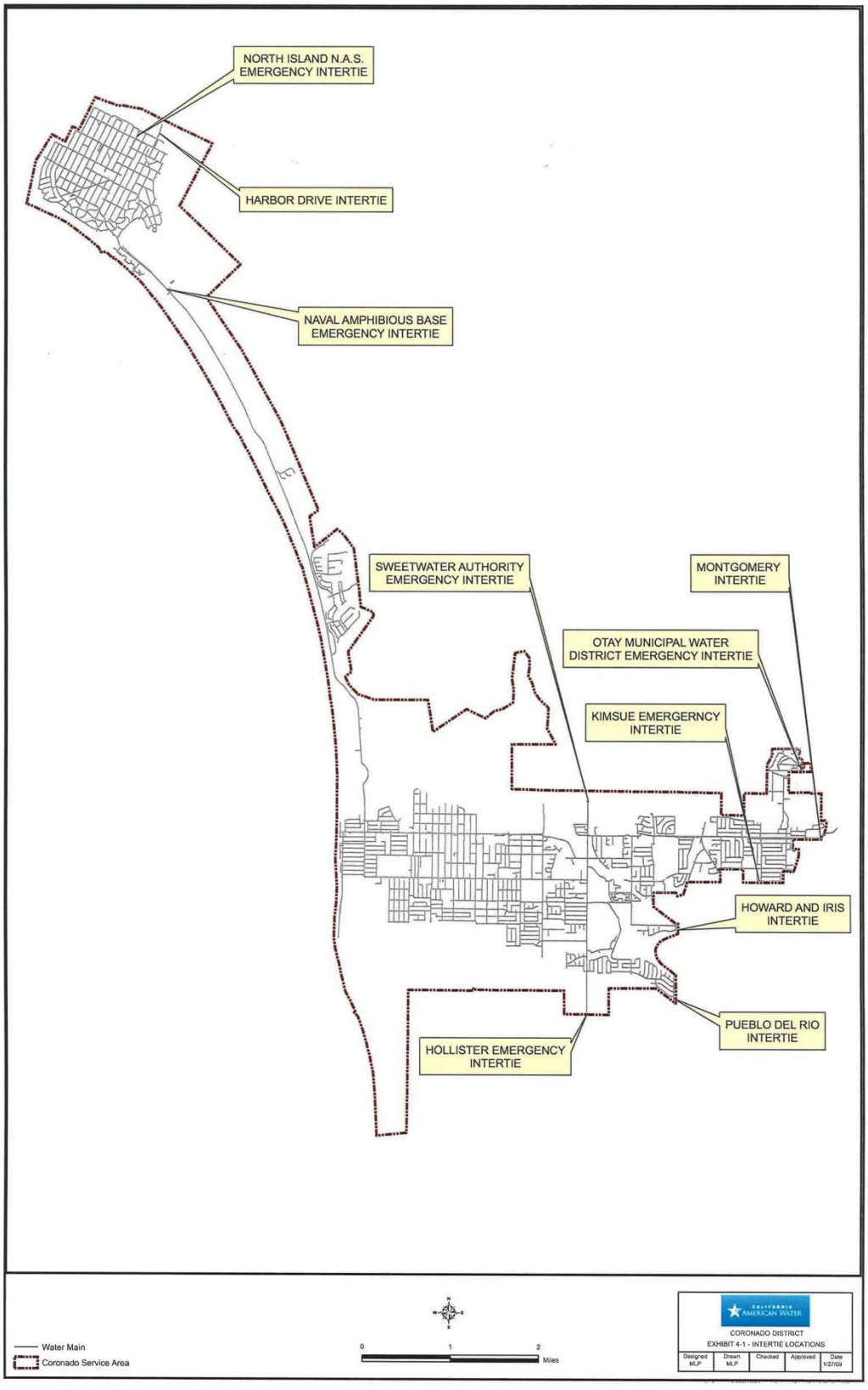


Figure 4-5. California American Water Interties

4.2 GROUNDWATER

The District does not extract groundwater. Sources of supply for the wholesale water agencies that supply the District are shown in Section 4.1.

Although the District does not currently extract groundwater, the District lies above two groundwater basins, the Otay Valley and the Tijuana Groundwater Basins (see Figure 4-6). The District has produced groundwater in the past from the Otay Valley Groundwater Basin through a single well, known as Well No. 8. The dates of production and quantities of production are unknown as the well was abandoned over 30 years ago. While the District no longer operates this well, opportunities for groundwater production from the Otay Valley and Tijuana Groundwater Basins may exist.

4.2.1 Otay Valley Groundwater Basin

DWR's Bulletin 118 provides a summary the Otay Valley Groundwater Basin (basin number 9-18) (16). The basin is located in southwestern San Diego County, adjacent to the Pacific Ocean, and has a surface area of 11 square miles. Water may be found in three primary formations: alluvium (well yields up to 300 gallon per minute (gpm)), the San Diego Formation (well yields from 150-400 gpm), and the Otay Formation (well yields from 10-50 gpm). The basin is primarily recharged from percolation of precipitation, stream-flow originating in valley highlands, and return of applied water. There is insufficient information available on the basin to develop a groundwater budget (16).

Groundwater located in the coastal plain area of the Otay Valley Groundwater Basin, which is the area that lies beneath the District, is rated marginal to inferior for domestic use. This is due to high total dissolved solids (TDS) content. Water is also rated marginal to inferior for irrigation purposes due to the high chloride concentrations (16).

While treatment may be expensive, groundwater production is feasible. Yields from municipal and irrigation wells in the basin range from 1 to 1,000 gpm with an average well yield of 185 gpm, based on 81 well completion reports (16).

The City of San Diego is investigating the San Diego Formation and looking into installing a test well to better understand recharge within the San Diego Formation. If the results of well testing and other analyses are favorable, the City may pursue developing municipal wells in the basin. The District will benefit from knowledge gained through the City's investigations and may consider groundwater production in the future.

4.2.2 Tijuana Groundwater Basin

DWR's Bulletin 118 provides a summary the Tijuana Groundwater Basin (basin number 9-19) (17). The basin is adjacent to the Pacific Ocean, with the international border with Mexico as its southern boundary. The basin lies beneath a portion of the Tijuana River Valley that lies within California. Water may be found in two primary formations: Quaternary alluvium (well yields up to 2,000 gpm, with an average of 1,000 gpm) and the San Diego Formation (well yields up to 1,000 gpm, with an average of 350 gpm). The basin is primarily recharged from the Tijuana River and controlled releases from two reservoirs in San Diego County (Barrett and Morena Reservoirs) and one reservoir in Mexico (Rodriguez Reservoir) (17).

The groundwater in the basin has historically moved westward towards the Pacific Ocean. From the 1950s to 1970s, water levels in the basin declined which allowed seawater to move eastward and infiltrate the aquifer. In the 1970s, changes to pumping practices were made and by the 1990s, the groundwater began to flow westward again (17).

The basin's storage capacity is estimated to be about 50,000 to 80,000 AF. According to the DWR Bulletin, SDCWA reports annual production from the Quaternary alluvium to be about 1,500 AFY. Production from the San Diego Formation is unknown (17).

The International Boundary and Water Commission monitors groundwater levels and water quality through 28 wells in the basin. Groundwater from the basin contains high levels of sodium and chloride, with TDS concentrations ranging from 380 to 3,620 mg/L. Some wells in the basin have been recorded to exceed maximum contaminant levels (MCLs) for certain contaminants, including chlorite and sulfate (17).

The City of San Diego is currently investigating the feasibility of using the Tijuana Groundwater Basin as an aquifer storage and recovery system to store recycled water from the City's South Bay Water Reclamation Plant (SBWRP) to meet demands during the dry season (5). Information gained through the City's study may yield opportunities for the District to collaborate with the City on these efforts or to pursue groundwater production in the basin.

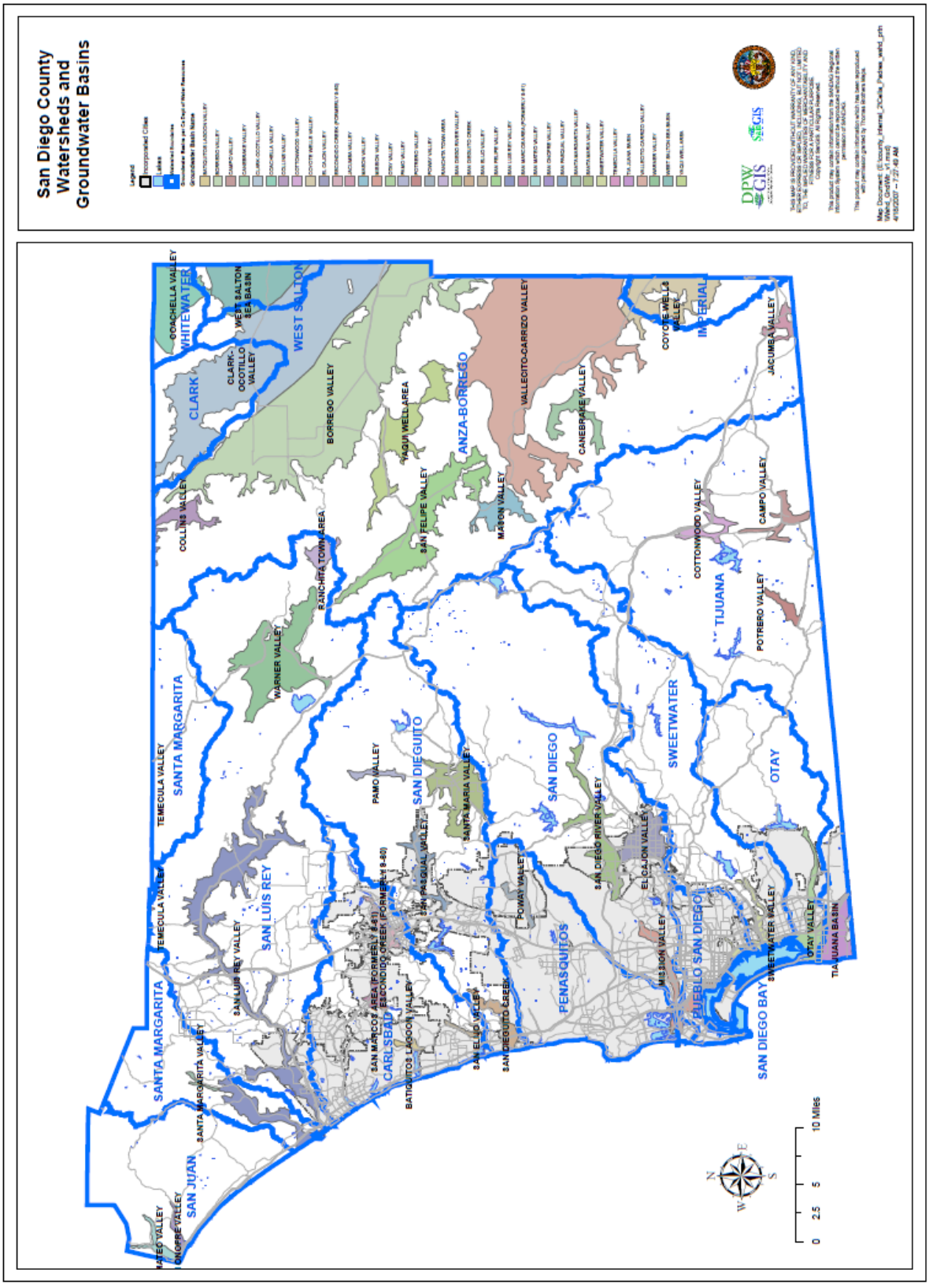


Figure 4-6. San Diego County Watersheds and Groundwater Basins (18)

4.3 SURFACE WATER

The District does not have its own surface water supply. Sources of supply for the wholesale water agencies that supply the District are shown in Section 4.1.

4.4 TRANSFER OPPORTUNITIES

The District is not presently pursuing transfer opportunities. However, transfer opportunities may exist in the future between California American Water and Otay WD or Sweetwater Authority. The emergency connections with Otay WD and Sweetwater Authority have been upgraded and now allow flow both into and out of California American Water's system. This bi-directional flow capability would allow for water transfers.

4.5 DESALINATED WATER OPPORTUNITIES

Desalination has the potential to provide the San Diego area with a local source of supply. Desalination opportunities are being investigated to reduce dependence on imported supply and provide a new treated water supply that is not impacted by droughts (13). SDCWA has been investigating desalination since 1990 and developed a Desalination Action Plan in 2006, which calls for 89,000 AF of new local and regional desalination supplies by 2030. In addition, the Desalination Action Plan calls for additional evaluation of project sites, including smaller projects like brackish water desalination plants (13). SDCWA and other local agencies have been actively pursuing funding at the federal, state, and local levels to evaluate and develop desalination projects.

With the desalinated water pursuits occurring in the San Diego area, CAW's San Diego County District may have the opportunity to purchase desalinated water which would reduce its dependence on imported supplies and/or the City of San Diego. Three approaches for the District to incorporate desalinated water supplies are discussed below: desalinated brackish groundwater from the Sweetwater Authority or the Otay WD; the Carlsbad Desalination Project; and the Camp Pendleton Desalination Project.

4.5.1 Brackish Groundwater Desalination

Sweetwater Authority owns and operates a groundwater desalination facility called the Richard A. Reynolds Groundwater Desalination Facility, which was completed in 1999. This facility uses reverse osmosis technology to remove salts and particles, including bacteria, from alluvial groundwater. The facility can produce up to 4 mgd of drinking water (19). The plant was constructed to accommodate expansion to produce up to a total of 8 mgd (20).

In its most recent master plan updated November 2010, the Otay WD identified an opportunity for a groundwater desalination facility (21). If constructed, the Otay River Groundwater Desalination Facility could produce approximately 4,500 AFY (21). The project would be located in the Lower Otay River Basin, which is located within the Otay River watershed, below the Lower Otay Reservoir. The project is divided into two phases. Phase 1 is focused on planning and feasibility aspects of the project. If the Otay WD decides to proceed with the project based on Phase 1 results, Phase 2 will include a pilot project, environmental compliance, permitting, design and construction. The Sweetwater Authority and the Otay WD are partners on this project. Together they have received $242,000 in grant funding from DWR and contributed $357,000, yielding a total of $599,000 to carry out the feasibility study. Additionally, in 2007, the two agencies received a $1.5 million matching grant from SDCWA to carry out a $3 million USGS Study of the San Diego Formation for Potential In-lieu Conjunctive Use to better understand alluvial deposits and their uses (21).

Although there has been activity and funding in the past as described above, the Sweetwater Authority has recently informed the District that the Sweetwater Authority and Otay WD are not currently pursuing groundwater desalination opportunities in the Otay River Basin due to the cost and difficulty of brine disposal (22). Additionally, due to institutional and legal issues, the Sweetwater Authority does not believe there is an opportunity to partner with the District on potential groundwater desalination projects at this time (22).

4.5.2 Carlsbad Desalination Project

The Carlsbad Desalination Project is being developed by Poseidon Resources near the Encina Power Station in Carlsbad. The project has received final approvals and is expected to be operational by 2016 (10). When complete, the project is expected to produce approximately 56,000 AFY (23). In July 2010, SDCWA approved a term sheet between Poseidon Resources and SDCWA. As SDCWA became involved in the project, SDCWA was asked to accept the role as the sole purchaser of supply. This allowed the project to be financially feasible. The prior arrangement where Poseidon Resources contracted with various local water agencies was determined to be financially infeasible (10). SDCWA is currently preparing a first draft of a water purchase agreement (24). The project would add a pipeline to bring water from the desalination plant to SDCWA's existing regional aqueduct system (25).

As a member of SDCWA, the City of San Diego will benefit from this new source of supply. The District will likewise benefit as the District purchases its supply from the City.

4.5.3 Camp Pendleton Desalination Project

SDCWA is leading the development of the Camp Pendleton Desalination Plant. SDCWA completed an engineering feasibility study in 2009 that evaluated two site alternatives located in the southwest region of Camp Pendleton. The desalination facility would use reverse osmosis membrane technology and is expected to produce 50 mgd during Phase 1. If supply and demand conditions support expansion, two subsequent expansions of 50 mgd each could be carried out, which would bring the facility's total capacity to 150 mgd (26).

The desalinated water is expected to be conveyed to SDCWA's second aqueduct. A Desalinated Water Conveyance Pipeline (DWCP) and associated pumping facilities would be constructed to move the water from the desalination facility to SDCWA's Twin Oaks Diversion Structure or Twin Oaks Valley Water Treatment Plant Clearwell. Water would be conveyed from the south pipeline segment of DWCP to the Oceanside Pipeline to SCDWA's existing North County Distribution Pipeline, and finally to the Twin Oaks facilities on SDCWA's Second Aqueduct (26).

The feasibility study presents a schedule to have the project online by 2019. SDCWA is expected to continue planning studies through March 2012, and incorporate results into its master plan. Once the master plan is near completion, SDCWA's Board will decide whether to continue, delay or defer the project (26).

If SDCWA decides to continue to develop the Camp Pendleton Desalination Project based on the results of its master planning effort, CAW's San Diego County District would receive water from this desalination plant because the City of San Diego, the District's supplier, is a member agency of SDCWA.

4.6 RECYCLED WATER OPPORTUNITIES

California America Water does not own or operate wastewater collection or treatment facilities or recycled water distribution facilities. While there are no recycled water capital projects underway in the District, several recycled water feasibility studies have been performed or are in process. These feasibility studies are discussed in Section 4.6.3.

4.6.1 Wastewater System Description

Wastewater generated within the San Diego County District's service area is collected by each of the respective cities (Coronado, Imperial Beach, San Diego and Chula Vista). Wastewater treatment and disposal is provided by the City of San Diego's Metropolitan Wastewater Department (MWWD). Most of the San Diego County District's wastewater is currently treated at MWWD's Point Loma Wastewater Treatment Plant, the largest wastewater plant in MWWD's system. The facility has a treatment capacity of 240 mgd. The facility processes wastewater at an advanced primary treatment level. The treated wastewater is discharged to the ocean through a 4.5 mile ocean outfall at a depth of 320 feet.

Some of the wastewater generated in the San Diego County District's service area is diverted to MWWD's South Bay Water Reclamation Plant (SBWRP), which is located in the Tijuana River Valley near the U.S.-Mexico border (27). The SBWRP opened it 2002, but did not begin distributing recycled water until 2006. The SBWRP has a treatment capacity of 15 mgd (inflow) and a maximum recycled water production capacity of 13.5 mgd (outflow) (28). In 2009, 75% of the reclaimed water was beneficially used by the Otay Water District, the South Bay International Wastewater Treatment Plant, or used for in-plant processes. In the warmer months, almost 100% of reclaimed water was reused (29).

Wastewater collected in the District was estimated based on population projections and unit wastewater flow rates. This analysis uses the same wastewater flow rates assumed in the City of Chula Vista's 2005 Wastewater Master Plan, which are 70 gallons per capita per day and 20 gallons per employee per day (30). The exact quantity of wastewater generated in the District that is diverted and treated to recycled water standards at the SBWRP is unknown. Therefore, the percentage of wastewater generated by the City of San Diego's entire service area that is treated to recycled water standards was applied to the wastewater generated in the District. This provides an estimate of the wastewater generated in the District that is treated to recycled water standards. Note that this recycled water is treated by the City of San Diego and is not used within the District.

Table 4-8 summarizes the quantity of wastewater collected and the quantity that is treated to recycled water standards.

Table 4-8. Wastewater Collected and Treated, afy

Type of Wastewater	2005	2010	2015	2020	2025	2030
Wastewater collected & treated in service area[1]	8,718	8,653	8,786	8,962	9,109	9,398
Volume that meets recycled water standard[2]	647	1,210	1,199	1,193	1,175	1,170

[1] Assumes 70 gallons per capita per day and 20 gallons per employee per day (30). Population estimates based on Census and SANDAG data. Employee estimates based on 2005 UWMP calculations which used 2030 SANDAG regional growth forecast.
[2] Assumes 7.4% of wastewater is recycled in 2005, 14.0% in 2010, 13.6% in 2015, 13.3% in 2020, 12.9% in 2025, and 12.4% in 2030. This is based on the percentage of wastewater from the entire City's service area that is treated to recycled water standards, as reported in the City of San Diego's Draft 2010 UWMP (5).

Wastewater from the Point Loma Wastewater Treatment Plant is disposed of through ocean outfall. Additionally, treated water from the SBWRP that is not beneficially reused is disposed of through ocean outfall (5). The percentage of wastewater discharged at each facility by the City of San Diego was applied to the volume of wastewater generated in the District that was not assumed to be recycled. This provides an estimate of the quantity of wastewater discharged to the ocean at each facility. The wastewater disposal methods and quantities are shown in Table 4-9.

Table 4-9. Disposal of Wastewater (non-recycled), afy

Method of Disposal	Treatment Level	2005	2010	2015	2020	2025	2030
Point Loma Ocean Outfall[1]	Advanced Primary	7,910	7,337	7,534	7,717	7,883	8,177
SBWRP Ocean Outfall[1]	Secondary or better	161	106	52	52	51	51
	Total	**8,071**	**7,443**	**7,587**	**7,769**	**7,934**	**8,228**

[1]Assumes the following percentage of non-recycled wastewater is disposed of at the Point Loma ocean outfall: 98.0% in 2005, 98.6% in 2010, 99.3% in 2015, 99.3% in 2020, 99.4% in 2025, 99.4% in 2030, with the remainder being disposed of through the SBWRP ocean outfall. This is based on the percentage of non-recycled wastewater discharged by the City of San Diego at each facility, as reported in the City of San Diego's Draft 2010 UWMP (5).

4.6.2 Recycled Water Supply and Uses

The District does not currently purchase recycled water or use any recycled water as a source of supply.

As described above, the City of San Diego collects and treats all wastewater generated in the District, some of which is treated to recycled water standards at the SBWRP. The City has two recycled water service areas, the Southern Service Area and the Northern Service Area (shown in Figure 4-7). Recycled water supplied to the Southern Service area is treated at the SBWRP (5). The City of San Diego delivers recycled water for non-potable uses, including irrigation, industrial and construction purposes, decorative fountains, and toilet flushing (5). In addition, the City sells recycled water to several wholesale customers, including the Otay WD, which receives recycled water from the SBWRP. The Otay WD uses recycled water for non-potable uses, offsetting potable water demands. For more information on the City of San Diego's use of recycled water and the City's recycled water plans, refer to Section 4.6 of the City of San Diego's 2010 UWMP (5).

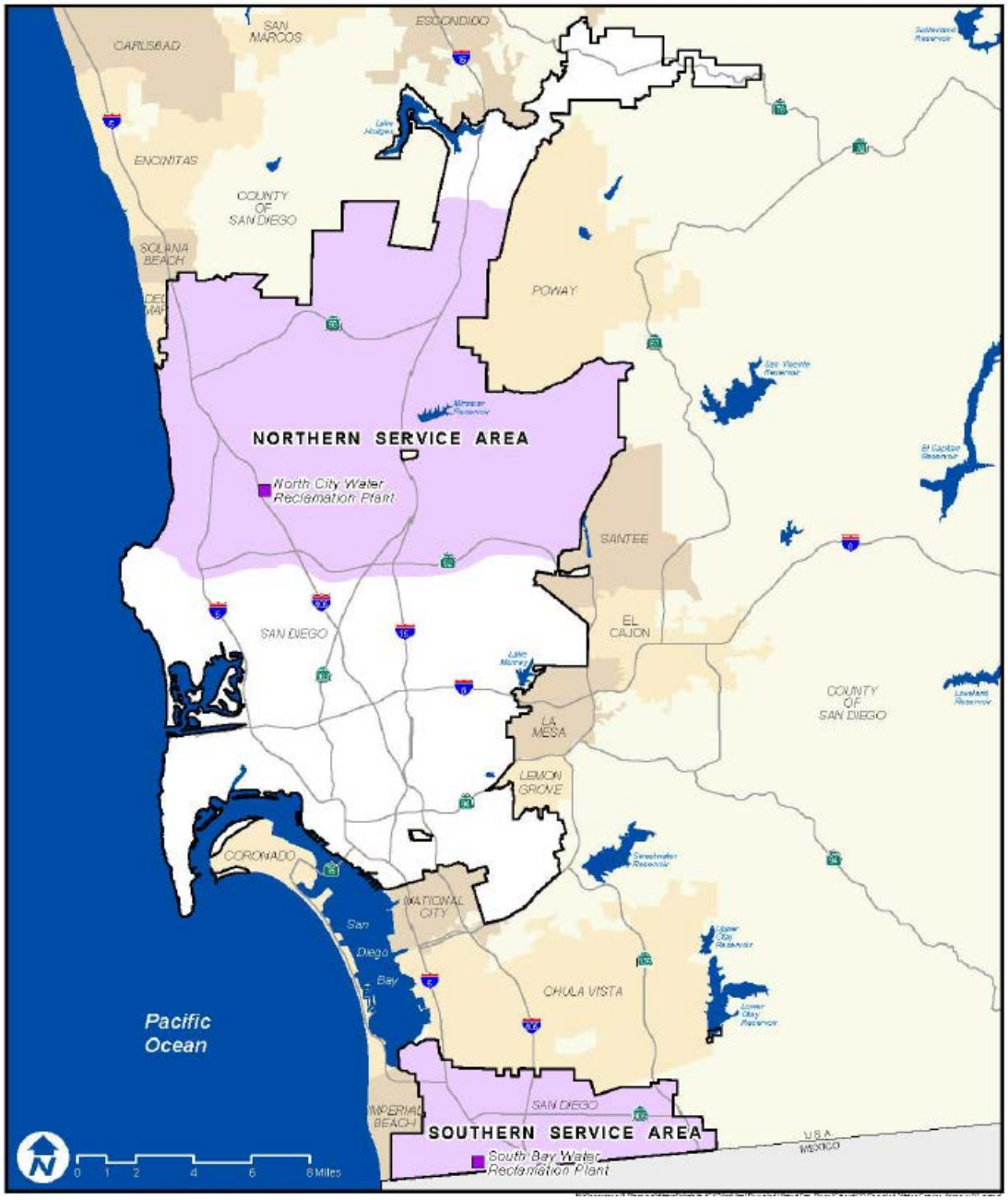


Figure 4-7. City of San Diego Recycled Water Service Areas (5)

4.6.3 Recycled Water Use Optimization

Recycled water is not currently delivered to or used in the District. The primary potential use for recycled water in the District is landscape irrigation at public parks, golf courses, government facilities and schools. Table 4-10 shows the potential recycled water use in the District assuming all dedicated irrigation demand is provided by recycled water. Potential recycled water use does not consider whether the necessary recycled water infrastructure exists or is planned.

Table 4-10. Potential Recycled Water Use in Service Area, afy

User type	Description	2015	2020	2025	2030
Agricultural irrigation	N/A	0	0	0	0
Landscape irrigation[1]	Tertiary Treatment	383	383	389	403
Commercial irrigation[1]	Tertiary Treatment	339	338	344	356
Golf course irrigation[1]	Tertiary Treatment	389	388	395	409
Wildlife habitat	N/A	0	0	0	0
Wetlands	N/A	0	0	0	0
Industrial reuse	N/A	0	0	0	0
Groundwater recharge	N/A	0	0	0	0
Seawater barrier	N/A	0	0	0	0
Geothermal/Energy	N/A	0	0	0	0
Indirect potable reuse	N/A	0	0	0	0
Total		**1,111**	**1,110**	**1,128**	**1,167**

[1]CAW 2010 customer database was used to apportion landscape water use to each irrigation category (landscape irrigation, commercial irrigation, and golf course irrigation).

In 2005, the City of San Diego prepared a Recycled Water Master Plan (RWMP) Update (31). The RWMP outlined the City's broad plan to increase recycled water use in its Northern, Central and Southern Service Areas. California American Water's San Diego County District is included in the City of San Diego's Southern Service Area and is listed as one of the largest potable water users in the Southern Service Area. However, there are currently no plans to extend the City of San Diego's recycled water distribution system into the San Diego County District. The City of San Diego's expansion in the Southern Service Area is primarily focused on opportunities with the Otay Water District and Sweetwater Authority (31).

The Coronado golf course has a large potential for recycled water use. In 2005, a study to assess the feasibility of on-site water reclamation at the City of Coronado's Municipal Golf Course was performed (32). On-site water recycling (OSR) is seen as a viable alternative for golf courses where there are no existing or planned recycled water pipeline networks. The study concluded that an OSR system with a

rated capacity of 400,000 gallons per day could supply 100% of the total annual irrigation demands of the Coronado Golf Course, Tidelands Park, and the CalTrans State Route 75 landscape easement. The approximate areas and estimated water demand for irrigation are shown in Table 4-11. At the time of the study, this system was estimated to cost $12.4 million, which translated to a cost of $2,740/af without rebates or credits. For comparison, the delivered cost of water from CAW for golf course irrigation was $950/af at that time.

Table 4-11. Locations in Coronado with Greatest Potential for Recycled Water Use (32)

Site Location	Estimated Irrigated Area (acres)	Estimated Water Demand (afy)
Coronado Golf Course	110	330
Tidelands Park	6	72
CalTrans Route 75 easement	24	18
Total	**140**	**420**

In addition to the three locations identified above, the study identified nine additional municipal and school sites where recycled water could be used as shown in Table 4-12.

Table 4-12. Other Locations in the San Diego County District with Potential for Recycled Water (32)

Site Location	Estimated Irrigated Area (acres)	Estimated Water Demand (AFY)
Coronado High School	4.2	12.6
Coronado Library	2.0	6.0
Spreckels Park	4.1	12.3
Mathewson Park	1.2	3.6
Vetter Park	0.5	1.5
Orange Ave. Median	4.3	12.9
Bay Circle Park	0.5	1.5
Star Park	0.7	2.1
Centennial Park	2.5	7.5
Total	**20.0**	**60**

According to this study, approximately 480 AFY of demand in the San Diego County District could be met with recycled water, thus reducing potable water demands by the equivalent amount (32).

In 2010, the City of Coronado commissioned a water reclamation feasibility study to review prior studies and identify new alternatives. The study was planned to be completed by the end of 2010 (33). According to the City of Coronado, the study is now expected to be completed in the summer of 2011.

This study will likely provide updates on the potential demand in Coronado that could be met with recycled water and serve as the basis for near-term decisions regarding the implementation of water reclamation projects.

For the purposes of this UWMP, it is assumed that the OSR system serving the Coronado golf course, Tidelands park, and the CalTrans easement is constructed and operating by 2020. This estimate should be updated when the City of Coronado's study is released. As currently envisioned, the OSR system would meet 420 AFY of demand in the District. This is shown as the projected recycled water use in Table 4-13. The projected recycled water use is less than the potential recycled water use shown in Table 4-10 because the projected recycled water use represents what is planned and feasible, considering use and infrastructure.

Table 4-13. Projected Future Recycled Water Use in Service Area, afy

User type	Description	2015	2020	2025	2030
Agricultural irrigation	N/A	0	0	0	0
Landscape irrigation[1]	Tertiary Treatment	0	90	90	90
Commercial irrigation	Tertiary Treatment	0	0	0	0
Golf course irrigation[2]	Tertiary Treatment	0	330	330	330
Wildlife habitat	N/A	0	0	0	0
Wetlands	N/A	0	0	0	0
Industrial reuse	N/A	0	0	0	0
Groundwater recharge	N/A	0	0	0	0
Seawater barrier	N/A	0	0	0	0
Geothermal/Energy	N/A	0	0	0	0
Indirect potable reuse	N/A	0	0	0	0
Total		**0**	**420**	**420**	**420**

[1] Assumes recycled water is used to irrigate Tidelands park and CalTrans Route 75 easement.
[2] Assumes recycled water is used to irrigate Coronado Municipal Golf Course.

Table 4-14 shows the projected recycled water for 2010 as predicted in the 2005 UWMP as well as the actual recycled water use in 2010.

Table 4-14. 2005 UWMP Recycled Water Use Projected for 2010 and Actual 2010 Recycled Water Use, afy

Use Type	2010 Actual Use	2005 Projection for 2010
Agricultural irrigation	0	0
Landscape irrigation	0	0
Commercial irrigation	0	0
Golf course irrigation	0	0
Wildlife habitat	0	0
Wetlands	0	0
Industrial reuse	0	0
Groundwater recharge	0	0
Seawater barrier	0	0
Geothermal/Energy	0	0
Indirect potable reuse	0	0
Total	**0**	**0**

4.7 FUTURE WATER PROJECTS

California American Water develops capital improvement projects as a part of the Comprehensive Planning Studies (CPSs) which are periodically prepared for each service area. CPSs are typically prepared on a five to eight year cycle with interim updates prepared as conditions change or the need arises. The most recent CPS was prepared in 2009, and California American Water is currently preparing an update to this plan. Each service area is evaluated for specific needs from which a prioritized list of projects is developed. Projects are generally classified into one of several categories as follows: Source of Supply, Storage, Conjunctive Use, and Water Quality / Water Efficiency. Some projects meet multiple planning goals across two or more of the listed categories. A storage project, for example, not only provides increased system reliability but also assists in meeting peak hour demands often delaying the need for additional source of supply.

Currently, the San Diego County District does not have any capital projects planned to increase water supply. The projects identified in the 2009 CPS are focused on improving condition of existing infrastructure (3).

5 WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

5.1 WATER SUPPLY RELIABILITY

Historically, California American Water has been able to supply 100% of its demand through purchased water from the City of San Diego, and it is assumed that supply reliability of purchased water will equal 100% for the timeline of this plan. The District's contract with the City of San Diego, which dates back to 1912, was renewed for 25-years in 2004, making the purchased water supply a secure source. As described in Section 4.1.4, the City of San Diego is required to make up to 120% of the average system delivery per customer per day available to the District for purchase. Under the contract, however, if the City of San Diego implements mandatory reductions, the District is subject to delivery reductions from the City in the same proportion as the City's other customers.

5.1.1 Factors Affecting Supply Reliability

The City of San Diego has imported supplies and local surface water supplies. The City recognizes that climatic uncertainty is the main factor resulting in inconsistency of its local surface water supply (5). The amount of local surface water supply available depends on local climatic conditions, most importantly precipitation.

Imported water from SDCWA, which primarily comes from MWD, is affected by additional factors. MWD's supply is imported from the Colorado River and Bay-Delta through the SWP and the CRA, respectively. This imported supply is affected by legal, environmental, water quality and climatic factors.

- **Legal:** Supply allocations from the CRA are dictated through legal agreements and, in some cases, court settlements. Supply from SWP is affected by legal factors, including the Bay-Delta Accord, which changed operating criteria of the SWP and can significantly reduce supply to MWD in dry years (11).
- **Environmental:** The Colorado River supply is affected by various environmental issues, including conservation programs to protect endangered species (10). Several species of fish located in the Bay-Delta have been listed as endangered, which has led to decreased pumping by the SWP and environmental litigation (11).
- **Water Quality:** Water from the Colorado River has high salinity levels and also contains perchlorate and uranium, which MWD is monitoring closely. Disinfection byproducts pose water quality issues for the SWP. Disinfection byproducts form when total organic carbon and bromide in the source water react with disinfectants at the water treatment plant. Groundwater inflows into the SWP also pose arsenic concerns (11).
- **Climatic:** Variable hydrology in the basins that feed the Colorado River affects CRA supply. Variable hydrology in Northern California affects SWP supply.

The factors resulting in inconsistency of supply for both the City's local and imported sources are summarized in Table 5-1.

Table 5-1. San Diego County District Factors Resulting in Inconsistency of Supply

Water Supply Sources	Legal	Environmental	Water Quality	Climatic
City of San Diego- Local Surface Water[1]				X
City of San Diego- Imported Water[2]	X	X	X	X

[1] Source: City of San Diego 2010 Draft UWMP (5)
[2] Source: City of San Diego 2010 Draft UWMP (5), SDCWA 2010 Draft UWMP (10), MWD 2010 Regional UWMP (11).

5.1.2 Supply Reliability

Table 5-2 shows the supply reliability base years for the City of San Diego, the District's sole supply source. Also shown are the supply reliability base years for SDCWA, the largest source of supply for the City of San Diego, and MWD, the largest source of supply for SDCWA.

Table 5-2. San Diego County District Supply Reliability Base Years

Supply Reliability	Average Water Year	Single Dry	Multiple Dry Years
Direct Source			
City of San Diego[1]	1978	1964	1961-1965
Indirect Sources			
SDCWA[2]	1989	N/A	N/A
MWD[3]	N/A	1977	1990-1992

[1] Represents reliability of local surface supply. Source: City of San Diego Draft 2010 UWMP (5)
[2] Source: San Diego County Water Authority Draft 2010 UWMP (10)
[3] Source: Municipal Water District of Southern California 2010 Regional UWMP (11)

The City of San Diego projects that supply will meet demand during all hydrologic conditions, as shown in Table 5-3 (14).

Table 5-3. San Diego County District Supply Reliability- Current Water Uses

Water Supply Sources[1]	Average / Normal Water Year Supply	Single Dry Year	Multiple Dry Water Year Supply				
			Year 1	Year 2	Year 3	Year 4	Year 5
City of San Diego[1]	100%	100%	100%	100%	100%	100%	100%

[1] During a single dry or multiple dry year scenario, the City of San Diego projects that wholesale supplies from SDCWA will increase to offset reductions in local supplies and the City of San Diego will be able to meet 100% of demand. Refer to Section 4 of the City of San Diego's Draft 2010 UWMP. Source: City of San Diego Draft 2010 UWMP (5)

5.1.3 Resource Maximization and Import Minimization

The District relies on demand management to maximize use of resources. The District's demand management programs are described in Section 6.

Reducing potable water demands will help the District maximize resources and reduce imports. Using recycled water in the future for landscaping and other allowable applications will reduce the District's potable water demand, allowing the District to use its potable supply more efficiently and to reduce imported potable supply. See section 4.6 for more details on the potential use of recycled water in the District.

The District will benefit from the regional shift away from imported supplies. Looking at the current and future supplies of the City of San Diego, SDCWA and MWD, shows that imports to the District are expected to decrease. In 2010, approximately 87% of water received by the District was imported via the City of San Diego, SDCWA and MWD. In 2030, imported supply to the District is expected to decrease to 62%, as shown in Table 5-4.

Table 5-4. Current and Future Percentage of Imports to the District

Water Agency	Percent Imported Water 2010	Percent Imported Water 2030
MWD	100%	76%
SDCWA[1]	100%	91%
City of San Diego[2]	87%	89%
San Diego County District	**87%**	**62%**

[1] Does not include member agency supplies.
[2] Only includes potable water supply; does not include recycled water supply.

The District's ability to reduce imports is closely tied to the City of San Diego's supply plans. As discussed in Section 4.1, the majority of the City's supply is imported from SDCWA. Most of this imported water is being delivered via the SWP and CRA from the Delta and the Colorado River, respectively. The City adopted a Long-Range Water Resources Plan (LRWRP) in 2002, which built off its 1997 Strategic Plan for Water Supply (5). The LRWRP identifies potential near-term and long-term supplies. Based on these efforts, the City has been exploring new alternative resources, including groundwater, to reduce the City's reliance on imported supply. Approximately 10 groundwater basins lie within the City's vicinity. The City is investigating several of the basins to determine their potential to provide a local yearly supply and/or to store imported or reclaimed water to provide a dry year supply. Refer to Section 4 of the City of San Diego's 2010 UWMP for a detailed discussion (5). The City's, SDCWA's and MWD's efforts to reduce imported supply will inherently help the District to reduce imports.

5.2 WATER SHORTAGE CONTINGENCY PLANNING

5.2.1 Introduction

The UWMP Act requires a Water Shortage Contingency Plan to include stages of action, mandatory prohibitions and restrictions, consumption reduction methods, penalties for excessive use, a three-year minimum water supply estimate, and a catastrophic supply interruption plan.

5.2.2 Stages of Action, Mandatory Prohibitions and Restrictions, Consumption Reduction Methods, Penalties for Excessive Use

California American Water does not have the authority to enforce mandatory prohibitions and use restrictions without the approval of the California Public Utilities Commission (CPUC). As of July 13, 2009, California American Water's San Diego County District has received approval for implementing only voluntary water conservation measures. These measures are based on the CPUC's Rule No. 14.1 (Appendix B).

When water supplies are projected to be insufficient to meet average customer demand, and are beyond the control of California American Water, then California American Water can elect to use the stages of voluntary conservation in Section C of Rule No. 14.1 (Appendix B), after notifying the CPUC Water Division. If the water supply shortage requires more stringent prohibitions and restrictions, California American Water can request authorization from the CPUC to implement mandatory conservation and rationing measures from Section D of Rule No. 14.1 (Appendix B).

Upon filing to the CPUC for mandatory conservation, California American Water proposes the percent reduction or restriction in an advice letter. This allows California American Water to have the flexibility to request the necessary reduction percentage needed rather than going through multiple stages or processes. California American Water will work with other water purveyors in the region to implement a mandatory reduction percentage that is consistent with the region and necessary for the water supply/demand issues at the time. The CPUC approves the filing and the percent reduction, which then gives California American Water the authority to proceed in enforcing the restrictions.

In order to reach a 50 percent reduction, California American Water would file an immediate and urgent advice letter to the CPUC requesting approval to implement mandatory prohibitions and restrictions that may likely exceed the listed prohibitions and restrictions in the section of the current Rule No. 14.1 advice letter 772 applicable to the San Diego County District (Appendix B).

The Rule No. 14.1-SD in advice letter 772 (Appendix B), applicable to the Southern Division only, outlines stages of mandatory conservation.

5.2.3 Three-year Minimum Water Supply

The minimum supply for the San Diego County District is equal to the driest three-year historic sequence in the history of California American Water's supply, which is shown in Table 5-2. Through its contract with the City of San Diego, the District has a right to purchase up to 120% of its average system delivery per customer per day. Since there has never been a time when demand could not be fully met with purchased water from the City of San Diego this plan assumes that the supply from the City of San Diego meets 100% of the District's demand under a three-year minimum water supply scenario.

Table 5-5 shows the three-year minimum water supplies for the San Diego County District.

Table 5-5. San Diego County District Three-year Minimum Water Supplies, afy

Supply Source	2011	2012	2013
City of San Diego [1]	11,527	11,845	12,164

[1] The City of San Diego supply is assumed to be 100% of the District's demand. The City of San Diego is required to make up to 120% of the San Diego County District's average system delivery per customer per day available to the District for purchase.

5.2.4 Catastrophic Supply Interruption Plan

This section describes the response to emergency situations which interrupt water supply including earthquakes, regional power outages, system failures and other events specific to California American Water's sources.

California American Water has analyzed the nature and extent of likely catastrophes which could affect the ability to provide water supply for both consumptive and emergency use. Catastrophes are broadly classified as "naturally occurring" and "manmade". Natural catastrophes include such incidents as fire, flood, earthquake and electrical supply failure. Manmade catastrophes include such incidents as chemical spill, vandalism and sabotage, including terrorist attack, and mechanical failure. Manmade catastrophes can also have the same end result as those of natural disasters. As an example, a dam break regardless of the cause, could flood and damage or destroy facilities.

California American Water has installed a broad range of systems, procedures, and facilities to reduce the potential of significant water supply interruptions regardless of cause. Some of these systems, procedures and facilities are summarized here:

- All storage facilities are fenced and locked to prevent unauthorized entry.
- The District owns a trailer mounted generator that enables it to pump water from the City of Coronado to Imperial Beach.
- System pressure, water production flow rate, and power status are monitored and reported at the District office.
- California American Water's San Diego County District maintains on-call staff twenty-four hours a day for rapid response.

- California American Water maintains a stockpile of service line repair parts and associated construction equipment for repair of small leaks and line breaks.
- California American Water has blanket contracts with two local contractors to assist with larger emergency repairs caused by earthquake or other major event.
- California American Water's San Diego County District has completed an Emergency Response Plan detailing procedures and contacts and outlining responses to several most probable catastrophic events and has filed it with the Department of Public Health.
- An inherent strength in the San Diego County District's system is that it has multiple entry point connections. As a result the system has a high degree of redundancy.
- The San Diego County District's system has emergency interties with other adjacent water purveyors thus allowing mutual aid.

5.2.5 Revenue and Expenditure Analysis

California American Water develops a proposed rate structure and submits it to the CPUC for review and approval as part of each General Rate Case filing. These filings are usually made on a three-year cycle. To assist in revenue stabilization during periods of reduced sales, including mandatory reductions during drought, California American Water has obtained a Water Revenue Adjustment Mechanism (WRAM) in the last General Rate Case. A WRAM is the mechanism through which sales are decoupled from revenues, so that conservation is encouraged without having a negative financial impact. Currently, all of California American Water's districts, except Sacramento, have received CPUC approval for and have set up the WRAM.

A WRAM tracks the differences between total quantity charge revenues authorized by the CPUC ("Total Actual Quantity Revenues") and total quantity charge revenues actually recovered based on recorded water sales. The revenue requirements are the same under conservation rates as they would be under the previous rate structure. Implementation of a surchage/surcredit is determined by considering the net balance of the WRAM account in conjunction with a cost balancing account. The cost balancing account tracks actual variable costs for purchased power, purchased water, and pump taxes compared to CPUC adopted levels.

5.2.6 Mechanisms for Determining Actual Reductions

In the San Diego County District, all accounts are metered. During a water shortage, a comparison of delivery records would be carried out to determine if water is being conserved.

The San Diego County District's four main connections with the City of San Diego are metered and have continuous recording equipment. During a water shortage, a comparison of total water purchased would be carried out to determine if water is being conserved on the District level.

5.2.7 Supply and Demand Comparison

Table 5-6 shows a supply and demand comparison during a normal year scenario. Table 5-7 shows a supply and demand comparison during a single dry year scenario. Table 5-8 shows a supply and demand comparison during a multiple dry year scenario.

Table 5-6. Supply and Demand Comparison- Normal Year, afy

	2015	2020	2025	2030
Supply totals	12,810	12,790	13,005	13,454
Demand totals	12,810	12,790	13,005	13,454
Difference	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%

Table 5-7. Supply and Demand Comparison- Single Dry Year, afy

	2015	2020	2025	2030
Supply totals	12,810	12,790	13,005	13,454
Demand totals	12,810	12,790	13,005	13,454
Difference	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%

Table 5-8. Supply and Demand Comparison- Multiple Dry-Year Events, afy

		2015	2020	2025	2030
Multiple-dry year first year supply	Supply totals	12,810	12,790	13,005	13,454
	Demand totals	12,810	12,790	13,005	13,454
	Difference	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%
Multiple-dry year second year supply	Supply totals	12,810	12,790	13,005	13,454
	Demand totals	12,810	12,790	13,005	13,454
	Difference	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%
Multiple-dry year third year supply	Supply totals	12,810	12,790	13,005	13,454
	Demand totals	12,810	12,790	13,005	13,454
	Difference	0	0	0	0
	Difference as % of Supply	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%

5.2.8 Draft Ordinance

California American Water does not have authority to adopt resolutions or ordinances as a public utility company. However, California American Water can support local jurisdictions in developing ordinances or resolutions within the San Diego County District's service areas that would be compatible with California American Water's Water Shortage Contingency Plan. For all intents and purposes of this UWMP, the Rule No. 14.1 advice Letter 772 filed with the CPUC (see Appendix B) serves as the Water Shortage Contingency Plan resolution and anticipated course of action to achieve all necessary requirements of the Water Shortage Contingency Plan if needed.

5.3 WATER QUALITY

The San Diego County District continues to have good water quality. In 2009, the District's water met all U.S. Environmental Protection Agency (EPA) and California State drinking water standards (34).

The San Diego County District purchases all of its water as treated water from the City of San Diego. Water delivered to the District from the City of San Diego is of good quality and meets all primary and secondary drinking water standards (3). Lead and copper levels are low, which has allowed California American Water to continue a reduced monitoring program.

Since February 2011, the City of San Diego began fluoridating all of its drinking water, including that which is supplied to the California American Water's San Diego County District. The program was approved by the California Department of Public Health (CDPH) and includes rigorous monthly reporting to CDPH. Fluoride supplements are added to the water to bring the fluoride level to 0.7 milligrams per liter, which meets the U.S. Centers for Disease Control and Prevention recommended fluoride dose (35).

The U.S. Environmental Protection Agency's Stage 2 Disinfectant/Disinfection By-Product (D/DBP) Rule requires consecutive water purveyors to ensure that delivered water meets the D/DBP MCLs. The MCLs for Total Trihalomethane (TTHM) and haloacetic acid (HAA5), both which are by-products of drinking water chlorination, are 80 parts per billion (ppb) and 60 ppb, respectively. In 2009, the measured TTHM and HAA5 levels for the District were far below the MCLs; the TTHM level was 50.3 ppb and the HAA5 level was 15.2 ppb (34). The City of San Diego uses chloramine to maintain a disinfectant residual within the distribution system, which produces less TTHM and HAA5 by-products than chlorine, and helps the District comply with the Stage 2 D/DBP Rule (3).

6 DEMAND MANAGEMENT MEASURES

The UWMP Act requires a discussion of Demand Management Measures (DMMs), including a description of each of the DMMs currently being implemented or scheduled for implementation through 2015, the schedule of implementation for all DMMs, and the methods, if any, the San Diego County District will use to evaluate the effectiveness of DMMs. If a DMM is not being implemented or scheduled for implementation, the UWMP must include an evaluation of economic and noneconomic factors such as environmental, social, health, customer impact, and technological factors; a cost-benefit analysis; a description of funding available to implement any planned water supply project that would provide water at a higher unit cost; and a description of the legal authority of the water supplier to work with other relevant agencies to ensure the implementation of the measure and to share the cost of implementation.

The UWMP Act identifies 14 DMMs. These 14 DMMs correspond to the 14 Best Management Practices (BMPs) listed and described in the California Urban Water Conservation Council Memorandum of Understanding (CUWCC MOU). These 14 DMMs also correspond to the DMMs identified in DMM Implementation Compliance (AB 1420). The BMPs and DMMs are examples of sound water management practices that have been found to be cost effective and practicable in most instances throughout California. DWR consulted with CUWCC and determined that DMMs will be equated with BMPs. Therefore, DMMs and BMPs are referred to interchangeably in this Plan. Table 6-1 shows which DMMs and BMPs correspond with each other.

The UWMP Act allows CUWCC members to submit their 2009-2010 approved CUWCC BMP report with their UWMPs in lieu of a DMM section if the water supplier is in full compliance with the CUWCC MOU. The District is a CUWCC member but it is not known if the District is in full compliance since the District has not yet received indication from CUWCC. A copy of the District's 2009-2010 CUWCC BMP report is included in Appendix D to provide a framework for future UWMPs and BMP implementation, and this UWMP includes the required DMM section.

Table 6-1. DMMs and BMPs

CUWCC BMP Organization and Names (2009 MOU)				UWMP DMMs	
Type	Category	BMP #	BMP name	DMM #	DMM name
Foundational	Operations Practices	1.1.1	Conservation Coordinator	L	Water conservation coordinator
		1.1.2	Water Waste Prevention	M	Water waste prohibition
		1.1.3	Wholesale Agency Assistance Programs	J	Wholesale agency programs
		1.2	Water Loss Control	C	System water audits, leak detection, and repair
		1.3	Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections	D	Metering with commodity rates for all new connections and retrofit of existing connections
		1.4	Retail Conservation Pricing	K	Conservation pricing
	Education Programs	2.1	Public Information Programs	G	Public information programs
		2.2	School Education Programs	H	School education programs
Programmatic	Residential	3.1	Residential assistance program	A	Water survey programs for single-family residential and multifamily residential customers[1]
				B	Residential plumbing retrofit
		3.2	Landscape water survey	A	Water survey programs for single-family residential and multifamily residential customers[1]
		3.3	High-Efficiency Clothes Washing Machine Financial Incentive Programs	F	High-efficiency washing machine rebate programs
		3.4	WaterSense Specification (WSS) toilets	N	Residential ultra-low-flush toilet replacement programs
	Commercial, Industrial, and Institutional	4	Commercial, Industrial, and Institutional	I	Conservation programs for commercial, industrial, and institutional accounts
	Landscape	5	Landscape	E	Large landscape conservation programs and incentives

[1] Components of DMM A (Water survey programs for single-family residential and multifamily residential customers) apply to both BMP 3.1 (Residential assistance program) and BMP 3.2 (Landscape water survey)

6.1 EVALUATION OF BMP EFFECTIVENESS

The effectiveness of each BMP has an impact on the overall effectiveness of the BMPs. Some BMPs can be quantitatively evaluated independent of the other BMPs; for those BMPs, specific evaluation methodology is presented for the BMP in the appropriate subsection of Section 6.2.

The method used to evaluate the effectiveness of the BMPs as a whole is the calculation of the overall per capita water use (gpcd) reduction from the baseline per capita water use. As shown in Appendix A, the District's 2010 actual water use was 105 gpcd, which reflects a reduction in per capita water use of 13% from the baseline, and is less than the 2020 target water use of 116 gpcd. The District believes that these significant reductions make additional savings less likely and therefore does not anticipate further reductions in per capita water use beyond the 2020 target through the horizon of this plan.

Future effectiveness will continue to be measured by calculating reduction from the baseline per capita water use per the requirements of SB7 as described in Appendix A.

6.2 BMPS IMPLEMENTED OR PLANNED TO BE IMPLEMENTED

6.2.1 BMP 1.1.1 CONSERVATION COORDINATOR (DMM L)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Designate a person as the agency's responsible conservation coordinator for program management, tracking, planning, and reporting on BMP implementation* (36).

In 2005, California American Water created and staffed a statewide Water Conservation Coordinator position, now called the Manager of Conservation and Efficiencies. This position is responsible for managing the water conservation activities for all of the California American Water's districts. These responsibilities include preparing and tracking water conservation budgets, overseeing data collection, BMP fulfillment reporting and communicating with senior management regarding water conservation issues and related water conservation activities.

The Manager is supported by conservation staff in each district, as shown in Table 6-2. In the San Diego County District, there is one part-time conservation position, which is described in greater detail below. In addition, there is a full-time position, the Conservation Specialist, for the entire Southern Division, which includes the Ventura County District, the Los Angeles County District, and the San Diego County District.

Table 6-2. California American Water Conservation Team

Conservation Staff	Number of Full-Time Positions	Number of Part-Time Positions
Statewide	1	0
Sacramento District	1.5	2
Larkfield District	0	1
Monterey County District	2.5	1
Ventura County District	0	1
Los Angeles County District	0	1
San Diego County District	0	1
All Southern Division (Los Angeles, Ventura and San Diego County Districts)	1	0
Total	**6**	**7**

In 2010, the District funded one part-time Conservation position (37). The District's part-time conservation staff helped to administer the Conservation Program by tracking equipment inventory, performing conservation patrols, conducting research, responding to customer questions, and reaching out to customers to publicize conservation programs.

In addition, the Manager of Conservation and Efficiencies and the District's conservation staff work closely with and receive assistance from the staff at each of California American Water's Districts. The central call center and local district customer service staff are the primary responders for distributing water conserving devices and processing rebate applications. Operations personnel assist with collecting production and sales data, water loss reduction efforts, staffing local events, and coordinating with staff from cooperating agencies.

Table 6-3 shows the conservation staff through 2010. The District plans to continue implementing this BMP, but does not anticipate hiring any additional dedicated water conservation staff. Table 6-4 shows the planned conservation staff positions through 2014.

The method used to evaluate the effectiveness of the BMPs as a whole, and this BMP in particular, is the calculation of the overall per capita water use (gpcd) reduction from the baseline per capita water use. As shown in Appendix A, the District's 2010 actual water use was 105 gpcd, which reflects a reduction in per capita water use of 10% since the statewide Conservation Coordinator was hired in 2005. The District's 2010 actual water use of 105 gpcd is also less than the 2020 target water use of 116 gpcd. The District believes that these significant reductions make additional savings less likely and therefore does not anticipate further reductions in per capita water use beyond the 2020 target through the horizon of this plan.

Table 6-3. Actual Conservation Staff

Actual	2006	2007	2008	2009	2010
Number of full-time positions[1]	1	1	1	1	2
Number of part-time positions	-	-	-	-	1

[1] Includes the statewide Manager of Conservation and Efficiencies and, from 2010 forward, the Southern Division Conservation Specialist.

Table 6-4. Planned Conservation Staff

Planned	2011	2012	2013	2014
Number of full-time positions[1]	2	2	2	2
Number of part-time positions	1	1	1	1

[1] Includes the statewide Manager of Conservation and Efficiencies and the Southern Division Conservation Specialist.

6.2.2 BMP 1.1.2 WATER WASTE PREVENTION (DMM M)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

a) New development

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that (1) prohibit water waste such as, but not limited to: single- pass cooling systems; conveyer and in-bay vehicle wash and commercial laundry systems which do not reuse water; non-recirculating decorative water fountains and (2) address irrigation, landscape, and industrial, commercial, and other design inefficiencies.

b) Existing users

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that prohibit water waste such as, but not limited to: landscape and irrigation inefficiencies, commercial or industrial inefficiencies, and other misuses of water.

c) Water shortage measures

Enact, enforce, or support legislation, regulations, ordinances, or terms of service that facilitate implementation of water shortage response measures.

The District does not have legal authority or ordinances as a public utility company and must obtain approval from the CPUC to implement water conservation programs, including voluntary and/or mandatory measures. In July 2009, the CPUC approved California American Water's Rule 14.1, which defines water conservation measures and the approval process that California American must follow to implement mandatory water conservation (Appendix B).

Section D of Rule 14.1 (Appendix B) defines water conservation requirements that are effective at all times until deactivated by the CPUC. These conservation requirements define non-essential uses of water and limit the water waste from new developments and existing customers. Although these are considered requirements, they are voluntary and serve as the District's Voluntary Water Conservation Program. The District's Voluntary Water Conservation Program pamphlet, shown in Figure 6-1, is available online or from the District.

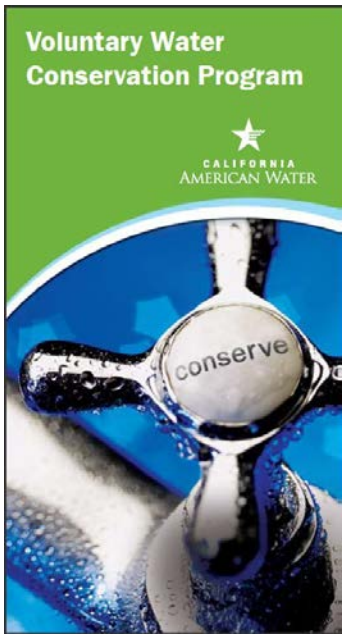


Figure 6-1. Conservation Pamphlet

Sections E through H of Rule 14.1 (Appendix B) list the specific requirements of the Districts 3 mandatory conservation stages. The District must receive authorization from the CPUC before implementing mandatory conservation measures.

The mandatory conservation stages listed in Rule 14.1 shall remain dormant until the District submits a letter to the CPUC and receives authorization to declare mandatory conservation. The mandatory conservation request letter to the CPUC shall include justification for activating the particular mandatory conservation stage, as well as the expected duration the mandatory conservation will be in effect.

6.2.3 BMP 1.1.3 WHOLESALE AGENCY ASSISTANCE PROGRAMS (DMM J)

This BMP is not applicable to retail water suppliers.

6.2.4 BMP 1.2 WATER LOSS CONTROL (DMM C)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *1) Standard Water Audit and Water Balance. All agencies shall quantify their current volume of apparent and real water loss. Agencies shall complete the standard water audit and balance using the AWWA Water Loss software to determine their current volume of apparent and real water loss and the cost impact of these losses on utility operations at no less than annual intervals.*
>
> *2) Validation. Agencies may use up to four years to develop a validated data set for all entries of their water audit and balance. Data validation shall follow the methods suggested by the AWWA Software to improve the accuracy of the quantities for real and apparent losses.*
>
> *3) Economic Values. For purposes of this BMP, the economic value of real loss recovery is based upon the agency's avoided cost of water as calculated by the Council's adopted Avoided Cost Model or other agency model consistent with the Council's Avoided Cost Model.*

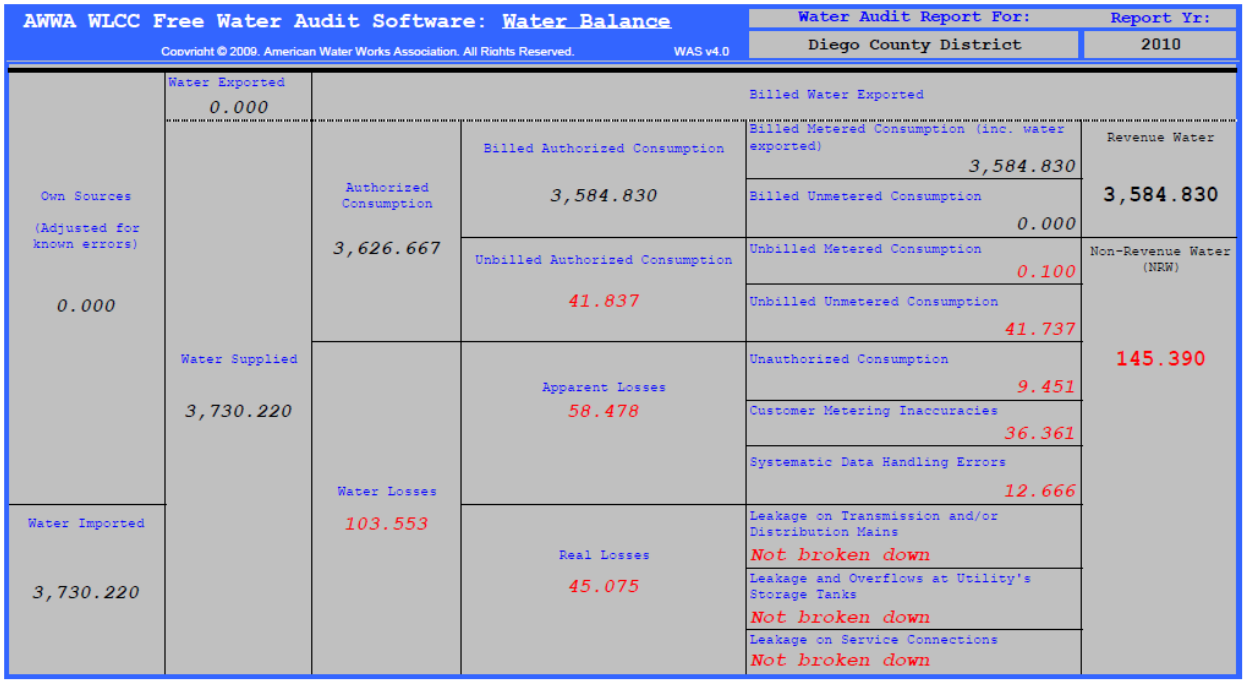
4) Component Analysis. A component analysis is required at least once every four years and is defined as a means to analyze apparent and real losses and their causes by quantity and type. The goal is to identify volumes of water loss, the cause of the water loss and the value of the water loss for each component. The component analysis model then provides information needed to support the economic analysis and selection of intervention tools. An example is the Breaks and Background Estimates Model (BABE) which segregates leakage into three components: background losses, reported leaks and unreported leaks.

5) Interventions. Agencies shall reduce real losses to the extent cost-effective. Agencies are encouraged to refer to the AWWA's 3rd Edition M36 Publication, Water Audits and Loss Control Programs (2009) for specific methods to reduce system losses.

6) Customer Leaks. Agencies shall advise customers whenever it appears possible that leaks exist on the customer's side of the meter.

The District's four main connections with the City of San Diego are metered and have continuous recording equipment. This gives a measure of the total amount of water entering the District's system, also called the total production. All billed customer connections are metered, which allows the District to measure the total billed customer deliveries. With the total production and the total billed deliveries, the District is able to calculate the non-revenue water (NRW). In 2010, the District had approximately 474 AFY of NRW. The District has unbilled authorized consumption; thus, the total losses are less than the NRW.

The District completed training in the AWWA Water Audit Method and the Component Analysis Process (38). In 2010, the District began using the AWWA Water Loss software to analyze water losses. The District performed the audit for a one-year period beginning March 2009 and ending February 2010. The results of the audit are shown in Figure 6-2, where all volumes reported are in million gallons (MG). According to the AWWA audit results, apparent losses were 58.5 MG (179.5 AF) and real losses were 45.1 MG (138.3 AF). Thus, the total water losses were 103.6 MG (317.8 AF) for the audit period (9). In addition to the audit, the District completed its most recent Component Analysis in February 2010 (38).



AWWA WLCC Free Water Audit Software: Water Balance

 WAS v4.0

Water Audit Report For: Diego County District | Report Yr: 2010

Own Sources (Adjusted for known errors) 0.000	Water Exported 0.000			Billed Water Exported	
	Water Supplied 3,730.220	Authorized Consumption 3,626.667	Billed Authorized Consumption 3,584.830	Billed Metered Consumption (inc. water exported) 3,584.830	Revenue Water 3,584.830
				Billed Unmetered Consumption 0.000	
			Unbilled Authorized Consumption 41.837	Unbilled Metered Consumption 0.100	Non-Revenue Water (NRW) 145.390
				Unbilled Unmetered Consumption 41.737	
		Water Losses 103.553	Apparent Losses 58.478	Unauthorized Consumption 9.451	
				Customer Metering Inaccuracies 36.361	
				Systematic Data Handling Errors 12.666	
Water Imported 3,730.220			Real Losses 45.075	Leakage on Transmission and/or Distribution Mains Not broken down	
				Leakage and Overflows at Utility's Storage Tanks Not broken down	
				Leakage on Service Connections Not broken down	

Figure 6-2. AWWA Water Balance for March 2009 through February 2010, Volumes are in Million Gallons (9)

The District repairs all leaks upon notification (39). Notification can come from the public or from internal staff who have located a leak in the system. The District is in the process of developing a statewide policy for water loss and leak detection. In addition, the District provides leak detection information and assistance to its customers through providing educational tools and giveaways, such as dye tablets, to detect leaks. This is discussed under BMP 3.1 (Section 6.2.9).

6.2.5 BMP 1.3 METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS (DMM D)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

1) Require meters for all new service connections.

2) Establish a program for retrofitting existing unmetered service connections.

3) Read meters and bill customers by volume of use.

a) Establish and maintain billing intervals that are no greater than bi-monthly (every two months) for all customers.

b) For each metered connection, perform at least five actual meter readings (including remotely sensed) per twelve month period.

4) Prepare a written plan, policy or program that includes:

> *a) A census of all meters, by size, type, year installed, customer class served and manufacturer's warranty accuracy when new;*
>
> *b) A currently approved schedule of meter testing and repair, by size, type and customer class;*
>
> *c) A currently approved schedule of meter replacement, by size, type, and customer class; and*
>
> *5) Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study(s) to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.*

The District is 100% metered. The District performs meter reading on a bi-monthly basis and consequently bills customers on a bi-monthly basis. All customers, with the exception of private fire connections, are billed a service charge and a usage rate/commodity charge for each unit of water consumed. The commodity charges for residential customers are based on a tiered rate structure. The commodity charges for commercial, industrial and public authority customers are based on a uniform rate structure. More details on rate structures are provided under BMP 1.4 (Section 6.2.6).

The District maintains a database to track meters and record years in service. Prior to 2010, the District had a program to test, repair, and replace water meters, per General Order No. 103 (40). The District is no longer required to carry out a regular testing program; however, the District tests specific meters if requested by a customer (41). Data on the number of meters tested and replaced per year was not available.

The District currently has 395 dedicated landscape meters. Currently, the District does not have a program or plan in place to switch mixed-use accounts to dedicated landscape meters. The District will switch mixed-use accounts to dedicated landscape meters upon customer request (costs are paid by the customer).

The District plans to continue to implement this BMP, but this BMP is not expected to yield additional water savings since all connections in the District are metered.

6.2.6 BMP 1.4 RETAIL CONSERVATION PRICING (DMM K)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Conservation pricing provides economic incentives (a price signal) to customers to use water efficiently. Because conservation pricing requires a volumetric rate, metered water service is a necessary condition of conservation pricing. Unmetered water service is inconsistent with the definition of conservation pricing.*
>
> *Conservation pricing requires volumetric rate(s). While this BMP defines a minimum percentage of water sales revenue from volumetric rates, the goal of this BMP is to recover the maximum amount of water sales revenue from volumetric rates that is consistent with utility costs (which may include utility long-run marginal costs), financial stability, revenue sufficiency, and customer equity.*

Part I. Retail Water Service Rates

In addition to volumetric rate(s), conservation pricing may also include one or more of the following other charges:

1) Service connection charges designed to recover the separable costs of adding new customers to the water distribution system.

2) Monthly or bimonthly meter/service charges to recover costs unrelated to the volume of water delivered or new service connections and to ensure system revenue sufficiency.

3) Special rates and charges for temporary service, fire protection service, and other irregular services provided by the utility.

The following volumetric rate designs are potentially consistent with the above definition:

1) Uniform rate in which the volumetric rate is constant regardless of the quantity consumed.

2) Seasonal rates in which the volumetric rate reflects seasonal variation in water delivery costs.

3) Tiered rates in which the volumetric rate increases as the quantity used increases.

4) Allocation-based rates in which the consumption tiers and respective volumetric rates are based on water use norms and water delivery costs established by the utility.

Adequacy of Volumetric Rate(s): A retail agency's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing when it satisfies at least one of the following two options.

Option 1: Let V stand for the total annual revenue from the volumetric rate(s) and M stand for total annual revenue from customer meter/service (fixed) charges, then:

$V/(V+M) \geq 70\%$

This calculation shall only include utility revenues from volumetric rates and monthly or bimonthly meter/service charges. It shall not include utility revenues from new service connection charges; revenue from special rates and charges for temporary service, fire protection, or other irregular services; revenue from grants or contributions from external sources in aid of construction or program implementation; or revenue from property or other utility taxes.

Option 2: Use the rate design model included with the Municipal Water and Wastewater Rate Manual published by the Canadian Water & Wastewater Association with the signatory's water system and cost information to calculate V', the uniform volume rate based on the signatory's long-run incremental cost of service, and M', the associated meter charge. [Let HCF be annual water delivery (in hundred cubic feet).] A signatory's volumetric rate(s) shall be deemed sufficiently consistent with the definition of conservation pricing if:

$V/V+M \geq V'/ V' + M'$

Part II. Retail Wastewater Service Rates

Conservation pricing of sewer service provides incentives to reduce average or peak use, or both. Such pricing includes: rates designed to recover the cost of providing service, and billing for sewer service based on metered water use. Conservation pricing of sewer service is also characterized by one or more of the following components: rates in which the unit rate is the same across all units of service (uniform rates); rates in which the unit rate increases as the quantity of units purchased increases (increasing block rates); rates in which the unit rate is based upon the long-run marginal cost or the cost of adding the next unit of capacity to the sewer system. Rates that charge customers a fixed amount per billing cycle for sewer service regardless of the units of service consumed do not satisfy the definition of conservation pricing of sewer service. Rates in which the typical bill is determined by high fixed charges and low commodity charges also do not satisfy the definition of conservation pricing of sewer service.

The type of rate structure used by the District for each customer type is shown in Table 6-5 and is described here:

(1) Residential Customers: The District's water rate structure encourages residential customers to conserve water by using tiered rates. The three tiers currently used are from 0-12 hundred cubic feet (HCF), 12-24 HCF and 24+ HCF (42). The tiered rate structure establishes volumetric rates; that is the more water a customer consumes, the more expensive the water becomes. In addition, the District's rates include a monthly service charge per meter depending on the size of the connection.
(2) Non-Residential Customers (except private fire): The District uses a uniform rate for commercial and public authority customers, in which the volumetric rate is constant regardless of the amount of water consumed. In addition, the District's rates include a monthly service charge per meter depending on the size of the connection.
(3) Private Fire Connections: Private fire protection systems and private fire hydrants are charged a fixed monthly fee per hydrant or connection.

Option 1 was chosen to analyze the adequacy of volumetric rates and is shown below for 2010:

V/ (V+M)≥ 70%

14,694,756/ (14,694,756+1,695,933) = .90

90% ≥ 70%

In 2010, the revenue from volumetric charges account for more than 70% of the total annual revenue, thus satisfying option 1.

The District does not provide sewer service; thus, part 2 of this BMP is not applicable.

Table 6-5. Water Rate Structures

Customer Type	Water Rate Structure
Residential	Three Tier Volumetric Rate
Commercial	Single Tier Volumetric Rate
Industrial	Single Tier Volumetric Rate
Institutional/Government	Single Tier Volumetric Rate
Private Fire	Fixed

6.2.7 BMP 2.1 PUBLIC INFORMATION PROGRAMS (DMM G)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *1) The program should include, when possible, but is not limited to, providing speakers to employees, community groups and the media; using paid and public service advertising; using bill inserts; providing information on customers' bills showing use for the last billing period compared to the same period the year before; providing public information to promote water conservation measures; and coordinating with other government agencies, industry groups, public interest groups, and the media.*
>
> *2) The program should include, when possible, social marketing elements which are designed to change attitudes to influence behavior. This includes seeking input from the public to shape the water conservation message; training stakeholders outside the utility staff in water conservation priorities and techniques; and developing partnerships with stakeholders who carry the conservation message to their target markets.*
>
> *3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency may operate all or part of the public information program. If the wholesale agency operates the entire program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting for this BMP. Under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.*

The District carries out public outreach programs and also benefits from outreach carried out by the District's wholesaler, the City of San Diego.

6.2.7.1 District's Programs

The District participates in community events, public meetings and outreach campaigns to reach out to customers and promote water use efficiency and conservation. In addition, the District provides bill messaging and inserts to customers to further encourage efficient water use.

Four events highlight the District's public outreach efforts: (1) the Sand Castle Competition in Imperial Beach, (2) interested party meetings, (3) bill inserts, and (4) the Demonstration Garden.

(1) Sand Castle Competition: The District participates in the annual Sand Castle Competition in Imperial Beach. The District's booth promotes specific conservation programs and provides customers with information on rebates, innovative devices (waterbrooms, weather-based irrigation controllers, etc.), and useful water saving tips for adults and kids (37). In addition, the District educates and entertains children with the Mr. Leaky costume and interactive games (43).

(2) Interested Party Meetings: The District holds public meetings to educate customers, answer questions and receive customer feedback. In 2010, the District held two meetings (one in March/April and one in December) for interested parties to discuss the District's tiered-rate structure and the District's conservation programs. The meetings were held at the District's operations center. The purpose of the meetings was to gather community input, specifically to measure the effectiveness of the District's water conservation programs (37).

(3) Bill Inserts: The District continues to utilize bill inserts as an outreach tool. Bill inserts are to customers and contain information on water conservation incentive programs and products available to customers, as well as water conservation tips. In 2010, the District sent out two bill inserts (37).

(4) Demonstration Garden: In 2009, the District, in partnership with the City of Imperial Beach, completed a California Friendly Drought Tolerant Demonstration Garden at the City of Imperial Beach City Hall. The demonstration garden was available for all residents and visitors to the City of Imperial Beach to visit throughout 2010, and will remain so in the future (40). In addition, the District built a demonstration garden at the District's office in Imperial Beach, the Imperial Beach Senior Citizen's Center and the Howard Pence Elementary School (41).

The District plans to continue implementing this BMP and also to expand outreach through other types of events, as shown in Table 6-7.

The effectiveness of this BMP cannot be measured quantitatively. However, it is assumed that educating the public in water conservation increases general awareness of water conservation issues and has contributed to the decline in water use seen in the District through 2010. Public outreach is expected to continue to play an important role in the District's conservation efforts and to help the District meet its 2020 gpcd target.

Table 6-6. Number of Actual Public Outreach Events

Actual	2006	2007	2008	2009	2010
a. Paid advertising	-	Yes[1]	-	-	-
b. Public Service Announcement	-		-	-	-
c. Bill Inserts / Newsletters / Brochures	-	Yes[1]	2	3	2
d. Bill comparing previous water usage	-	-	-	-	-
e. Demonstration Gardens[2]	-	-	-	1	1
f. Special Events, Media Events	-	Yes[1]	1	1	1
g. Speaker's Bureau	-	-	-	-	-
h. Program to coordinate with other govt agencies, industry and public interest groups and media	-	-	-	-	-
i. Public meetings	-	Yes[1]	2	2	2

[1] Quantity not tracked.
[2] Included here is the City of Imperial Beach Demonstration Garden. The District also has a partnership with the Conservation Garden at Cuyamaca College, which is available for student field trips, and is included in BMP 2.2 (Section **6.2.8**).

Table 6-7. Number of Planned Public Outreach Events

Planned	2011	2012	2013	2014
a. Paid advertising	4	4	4	4
b. Public Service Announcement	-	2	2	2
c. Bill Inserts / Newsletters / Brochures	2	2	2	2
d. Bill comparing previous water usage	-	-	-	-
e. Demonstration Gardens[1]	1	1	1	1
f. Special Events, Media Events	8	6	6	6
g. Speaker's Bureau	-	-	-	-
h. Program to coordinate with other govt agencies, industry and public interest groups and media	-	-	-	-
i. Public meetings	Included in f.			

[1] Included here is the City of Imperial Beach Demonstration Garden. The District also has a partnership with the Conservation Garden at Cuyamaca College, which is available for student field trips, and is included in BMP 2.2 (Section **6.2.8**).

6.2.7.2 City of San Diego's Programs

In addition to the District's outreach efforts, the District benefits from outreach and advertising carried out by the City of San Diego. The City of San Diego has extended its "No Time to Waste, No Water to Waste" campaign into the District's service area. This campaign educates customers on water conservation and water restrictions during droughts (5). For this campaign, the City uses various methods to reach the public including public awareness events at local stores and libraries, print and internet advertising, community presentations and public service announcements (5). The City plans to continue to collaborate with the District to carry out this campaign.

6.2.8 BMP 2.2 SCHOOL EDUCATION PROGRAMS (DMM H)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *1) Implement a school education program to promote water conservation and water conservation-related benefits.*
>
> *2) Programs shall include working with school districts and private schools in the water suppliers' service area to provide instructional assistance, educational materials, and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Educational materials shall meet the state education framework requirements and grade-appropriate materials shall be distributed.*
>
> *3) When mutually agreeable and beneficial, the wholesale agency or another lead regional agency will operate all or part of the education program; if the wholesale agency operates all or part of the retail agency's school education program, then it may, by mutual consent with the retail agency, assume responsibility for CUWCC reporting of this BMP; under this arrangement, a wholesale agency may aggregate all or portions of the reporting and coverage requirements of the retail agencies joining into the mutual consent.*

The District carries out school education programs and also benefits from educational programs implemented by the District's wholesaler, the City of San Diego.

6.2.8.1 District's Programs

The District participates in several school programs within its service area. The District has established a partnership with the Conservation Garden at Cuyamaca College, a local nonprofit organization. The District is now a member of the Garden; the City of San Diego provided a contribution to the District's membership (44) (41). The District sponsors field trips for schools within the District's service area to take students on field trips to the Garden. Through the program, students are bused to the garden and receive a lecture and tour of the garden. Students are taught basic water conservation principles and specific plant and landscaping knowledge to reduce outdoor water use. In 2010, four field trips with a total of 685 students visited the Garden (37). The District plans to continue partnering with the Conservation Garden and forecasts that approximately 700 students will visit the Garden in 2011 and 650 students per year from 2012 through 2014, as shown in Table 6-9.

In 2010, the District also began contracting with Resource Action Programs (RAP) to implement the LivingWise and WaterWise programs to educate students on water conservation and energy efficiency.

The programs target 6th graders in schools in the District's service area. The program includes in-class activities and lectures, at-home audit activities, and a student follow-up report of activities and findings. In 2010, 590 students participated in the program. The District plans to continue implementing this program and forecasts that approximately 600 students will participate in the program through 2014, as shown in Table 6-9.

Through 2009, the District sponsored interactive educational assemblies for grades K-6 put on by the National Theater for Children. The assemblies focused on water conservation, pollution and the environment (43) (40).

The District participates in other school programs within in its service area. The District maintains special annual school partnerships and, in 2007, donated money to two schools in the service area to expand educational programs covering topics like water conservation (43). The District also provides educational activity books and materials for K through 8th grade students (40).

The effectiveness of this BMP cannot be measured quantitatively. However, it is expected that educating students in water conservation increases general awareness of water conservation issues and may contribute to long-term water reduction in the District.

Table 6-8. Number of Students Reached

Actual	2006	2007	2008	2009	2010
Grades K-3rd	400	-	-	-	0
Grades 4th-6th	400	-	-	-	590
Grades 7th-8th	-	-	-	-	0
High School	-		-	-	0
Unspecified	-	Yes[1]	Yes[1]	Yes[1]	685
Total	**800**	**Yes[1]**	**Yes[1]**	**Yes[1]**	**1,275**

[1] Educational programs were carried out but number of students reached was not recorded.

Table 6-9. Number of Students Expected to be Reached

Planned	2011	2012	2013	2014
Grades K-3rd	-	-	-	-
Grades 4th-6th	600	600	600	600
Grades 7th-8th	-	-	-	-
High School	-	-	-	-
Unspecified	700	650	650	650
Total	**1,300**	**1,250**	**1,250**	**1,250**

6.2.8.2 City of San Diego's Programs

The District benefits from some of the school outreach programs carried out by the City of San Diego. The City of San Diego has an annual poster contest and an annual film contest; students attending schools within the District's service are eligible to participate (44).

The Children's Water Conservation Poster Contest targets 1st through 6th grade students. The theme for the 2011 poster contest was "San Diegans Waste No Water" (45).

The City's Water Conservation Film Contest is open to 11th and 12th grade students, as well as college students. Students in the District's service area are eligible to participate. The contest challenges students to create 30-second public service announcements related to water conservation. The winning entries are featured in movie trailers in three local cinemas during summer 2011 (44).

The City and the District plan to continue to collaborate on school education programs.

6.2.9 BMP 3.1 RESIDENTIAL ASSISTANCE PROGRAM (DMM A/ DMM B)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Provide site-specific leak detection assistance that may include, but is not limited to, the following: a water conservation survey, water efficiency suggestions, and/or inspection. Provide showerheads and faucet-aerators that meet the current water efficiency standard as stipulated in the WaterSense Specifications (WSS) as needed.*

The District has a Residential Water Audits Program and a Residential Plumbing Retrofit Program, which benefit the District's residential customers.

6.2.9.1 Residential Water Audits

The Residential Water Audits Program provides free residential audits for single and multi-family properties. The audits are carried out by the District's staff or by a contractor. The audits include a detailed assessment of the indoor and outdoor usage, an individualized water budget, and recommended monthly irrigation schedule. In addition, the customer receives a comprehensive audit package with applicable water savings devices, water and energy rebate application forms, and educational material. All audit data and information is collected and maintained in an Excel database to allow for easy tracking of water saving opportunities and natural upgrade trends for toilets and other water saving devices.

As the District's wholesaler, the City of San Diego plans to collaborate with the District in the upcoming fiscal year to offer a residential audit training program for the District's conservation staff. This will increase the District's capacity to carry out residential audits.

The historical and projected number of residential audits performed in the District are shown in Table 6-10 and Table 6-11.

Table 6-10. Actual Residential Water Audits

Actual	2006	2007	2008	2009	2010
Number of residential audits	-	-	-	27	37
Estimated water savings – AFY[1]	-	-	-	0.97	1.33
[1]Assumes 0.036 AFY of savings per audit based on CUWCC BMP Water Savings Worksheet for residential audits.					

Table 6-11. Planned Residential Water Audits

Planned	2011	2012	2013	2014
Number of residential audits	30	15	15	15
Projected water savings - AFY[1]	1.08	0.54	0.54	0.54
[1]Assumes 0.036 AFY of savings per audit based on CUWCC BMP Water Savings Worksheet for residential audits.				

6.2.9.2 Residential Plumbing Retrofit Program

Through the Residential Plumbing Retrofit Program, the District provides customers various water saving devices including showerheads, faucet aerators (kitchen and bathroom), toilet leak detection tablets, garden hose spray nozzles, soil probes, and educational pamphlets. The devices and materials are provided to customers upon request at community events and meetings, office walk-ins, customer call-ins, and through the home water survey program. The historical and projected devices distributed the program are shown in Table 6-12 and Table 6-13, respectively.

Table 6-12. Actual Number of Plumbing Retrofit Devices

Actual	2006	2007	2008	2009	2010
Showerhead	200	520	750	325	367
Faucet Aerator	100	1,150	800	575	108
Toilet Flapper	-	-	Up to 50	Up to 150	112
Tankbank	-	-	Up to 50	Up to 75	170
Drip Gauge	-	-	-	-	7
Leak Detection Tablets	-	800	Up to 1,000	Up to 350	265
Shower Timers	-	-	-	-	104
Water Efficiency Measurer Bag	-	-	-	-	8
Hose Spray Nozzle	-	750	400	350	211
Hose Timer	-	-	250	-	-
Soil Probe	-	400	200	215	41
Rain/Sprinkler Gauge	-	200	500	51	-
Other	-	-	200	-	-
Educational Materials	-	-	500	-	-
Total Number of Devices[1]	**300**	**3,820**	**Up to 4,000**	**Up to 2,091**	**1,393**
Estimated water savings – AFY[2]	**1.40**	**5.71**	**Up to 6.92**	**Up to 3.92**	**3.16**

[1] Does not include educational materials.
[2] Total water savings only includes savings for showerheads (0.0062 AFY/device), faucet aerators (0.0017 AFY/device), toilet flappers (0.0047 AFY/device) and leak detection tablets (0.0007 AFY/device). Water savings assumptions shown are based on CUWCC BMP Water Savings Worksheets for each device.

Table 6-13. Planned Number of Plumbing Retrofit Devices

Planned	2011	2012	2013	2014
Showerhead	200	100	100	100
Faucet Aerator	330	150	150	150
Toilet Flapper	100	50	50	50
Tankbank	150	50	50	50
Drip Gauge	25	25	25	25
Leak Detection Tablets	220	100	100	100
Shower Timers	80	40	40	40
Water Efficiency Measurer Bag	30	20	20	20
Hose Spray Nozzle	220	110	110	110
Soil Probe	25	20	20	20
Rain/Sprinkler Gauge	-	-	-	-
Other	-	-	-	-
Educational Materials	-	-	-	-
Total Number of Devices[1]	**1,380**	**665**	**665**	**665**
Estimated water savings – AFY[2]	**2.41**	**1.18**	**1.18**	**1.18**

[1] Does not include educational materials.
[2] Total water savings only includes savings for showerheads (0.0062 AFY/device), faucet aerators (0.0017 AFY/device), toilet flappers (0.0047 AFY/device) and leak detection tablets (0.0007 AFY/device). Water savings assumptions shown are based on CUWCC BMP Water Savings Worksheets for each device.

6.2.10 BMP 3.2 LANDSCAPE WATER SURVEY (DMM A)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Perform site-specific landscape water surveys that shall include, but are not limited to, the following: check irrigation system and timers for maintenance and repairs needed; estimate or measure landscaped area; develop customer irrigation schedule based on precipitation rate, local climate, irrigation system performance, and landscape conditions; review the scheduling with customer; provide information packet to customer; and provide customer with evaluation results and water savings recommendations.*

Site-specific landscape water surveys for residential customers are included with the Residential Water Audits Program described under BMP 3.1 (Section 6.2.9). Refer to BMP 3.1 (Section 6.2.9).

The District distributes various water conservation devices, including devices for use outdoors, as shown in 6.2.9.2. In addition, the District and the City of San Diego are collaborating to provide programs to the District focused on outdoor water conservation. This past year, the City opened up its annual California-Friendly Landscape Contest to the District's residents. The flyer for the contest is shown in

Figure 6-3. The City of San Diego is also working to secure grant funding to open the City's residential landscape rebate program to the District's customers (44).

Figure 6-3. City of San Diego Landscape Contest Flyer

6.2.11 BMP 3.3 HIGH-EFFICIENCY CLOTHES WASHING MACHINE FINANCIAL INCENTIVES PROGRAMS (DMM F)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Provide incentives or institute ordinances requiring the purchase of high-efficiency clothes washing machines (HECWs) that meet an average water factor value of 5.0. If the WaterSense Specification is less than 5.0, then the average water factor value will decrease to that amount.*

The District administers rebates for residential customers to purchase high-efficiency clothes washers (HECWs). Prior to January 2007, the District managed and provided in-house rebates for HECWs. From January 2007 through May 2007, the District's contracted View Tech to manage the HECW rebate program, while also processing rebates internally (43). In June 2007, the District partnered with CUWCC to offer the Smart Rebate program which was co-funded by the District and Proposition 50 Water Use Efficiency grant funding through DWR (43). The program continued through 2008 and into January 2009. DWR funding was frozen on January 31, 2009 (40). From January 31, 2009, through June 2010, the District provided in-house rebates for HECWs. In June 2010, the District resumed its partnership with CUWCC to provide rebates for HECWs through CUWCC's grant-funded Smart Rebate program (37).

The District plans to continue implementation of this BMP, as shown in Table 6-15.

Table 6-14. Actual HECW Rebates

Actual	2006[1]	2007	2008	2009	2010
$ per rebate	100	Up to 150	150[2]	150[2]	100/108[3]
Number of rebates paid	71	100	119	44	66
Estimated water savings – AFY [4]	2.23	3.14	3.74	1.38	2.07

[1] HECW's rebated in 2006 had a water factor less than or equal to 6, which was the lowest water use category in the 2006 CUWCC reporting framework.
[2] Rebate amounts are an estimate.
[3] From January 2010 to June 2010, rebates were $100 per HECW (provided through CAW in-house funding). After June 2010, rebates were $108 per HECW (provided through CUWCC's Smart Rebate Program).
[4] Assumes 0.0314 AFY of savings per HECW based on 2010 Smart Rebates program contract attachment provided by CUWCC, assuming a 10 year lifespan **(46)**.

Table 6-15. Planned HECW Rebates

Planned	2011	2012	2013	2014
$ per rebate	108	108	108	108
Number of rebates paid	30	35	35	35
Projected water savings – AFY [1]	0.94	1.10	1.10	1.10

[1] Assumes 0.0314 AFY of savings per HECW based on 2010 Smart Rebates program contract attachment provided by CUWCC, assuming a 10 year lifespan **(46)**.

6.2.12 BMP 3.4 WATER SENSE SPECIFICATION (WSS) TOILETS (DMM N)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> Provide incentives or ordinances requiring the replacement of existing toilets using 3.5 or more gpf *(gallons per flush) with a toilet meeting WSS.*

The current WSS requires that single flush toilets use 1.28 gpf or less, which is 20% less than the federal maximum of 1.6 gpf (47). Consistent with WSS, the CUWCC defines high-efficiency toilets (HETs) as toilets using 1.28 gpf or less. Note that ultra low flush toilets (ULFTs) are defined as toilets that use 1.6 gpf.

The District administers rebates for residential customers to replace existing toilets with HETs. Prior to June 2007, the District provided in-house rebates for replacing inefficient toilets with ULFTs or HETs. From June 2007 through January 2009, the District partnered with CUWCC to offer the Smart Rebate program which was co-funded by the District and Proposition 50 Water Use Efficiency grant funding through DWR. DWR funding was frozen on January 31, 2009 (40). From January 31, 2009, through June 2010, the District provided in-house rebates for HETs. In June 2010, the District resumed its partnership with CUWCC to provide rebates for HETs through CUWCC's grant-funded Smart Rebate program (37). The current rebate program requires existing toilets to use greater than 3.5 gpf to qualify. An HET that replaces an existing ULFT (1.6 gpf) does not qualify.

The rebates paid through each program are summarized in Table 6-16. The District plans to continue implementation of this BMP, as shown in Table 6-17.

Table 6-16. Actual HET Rebates

Actual	2006[1]	2007	2008	2009	2010
Number of HET rebates	58	24	30	63	35
Estimated water savings – AFY [2]	1.30	0.54	0.67	1.41	0.78

[1] In 2006, rebates were given for replacing inefficient toilets with ULFTs, which use 1.6 gpf.
[2] Assumes 0.0224 AFY of savings per HET based on 2010 Smart Rebates program contract attachment provided by CUWCC, assuming a 25 year lifespan **(46)**.

Table 6-17. Planned HET Rebates

Planned	2011	2012	2013	2014
Number of HET rebates	30	35	35	35
Projected water savings - AFY [1]	0.67	0.78	0.78	0.78

[1] Assumes 0.0224 AFY of savings per HET based on 2010 Smart Rebates program contract attachment provided by CUWCC, assuming a 25 year lifespan **(46)**.

6.2.13 BMP 4 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (DMM I)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

Implement measures to achieve the water savings goal for CII accounts of 10% of the baseline water use over a 10-year period. Baseline water use is defined as the water consumed by CII accounts in the agency's service area in 2008. Credit for prior activities, as reported through the BMP database, will be given for up to 50% of the goal; in this case, coverage will consist of reducing annual water use by CII accounts by an amount equal to the adjusted percentage goal within 10 years. Implementation shall consist of item 1) or 2) or both in order to reach the agency's water savings goals.

1) Implement measures on the CII list with well-documented savings that have been demonstrated for the purpose of documentation and reporting. The full list and their associated savings are included in the "Demonstrated Savings Measure List" in Section E below.

2) Implement unique conservation measures to achieve the agency's water savings goals. Sample measures include, but are not limited to: industrial process water use reduction, industrial laundry retrofits, car wash recycling systems, water-efficient commercial dishwashers, and wet cleaning. Water use reduction shall be calculated on a case-by-case basis. Agencies will be required to document how savings were realized and the method and calculations for estimating savings. See the CII Flex Track Menu list in the attachment to Exhibit 1, as updated in the MOU Compliance Policy and BMP Guidebook.

The District offers free water use audits to commercial, industrial, and institutional (CII) customers. The audits are performed by the District's contractor. CII audits are customized and include a detailed onsite audit that evaluates the facility, water use patterns, and indoor water use. After the audit, the customer is provided with detailed report containing the audit findings and a summary of recommendations specific to the property. The District began the program in 2010 and completed 15 CII audits in 2010, as shown in Table 6-18 (37).

Because the District's CII audits are customized, the water savings differs for each site. The total water savings reported for 2010 is the sum of the savings estimated for each of the audits. The average savings per audit was calculated based on the number of surveys performed and the total estimated savings from all the audits.

The District plans to continue implementation of this BMP by providing CII audits, as shown in Table 6-19.

Table 6-18. Actual CII Audits

Actual	2006	2007	2008	2009	2010
Number of surveys completed	-	-	-	-	15
Were incentives provided?	-	-	-	-	Yes
Number of follow-up visits	-	-	-	-	-
Estimated water savings – AFY[1]	-	-	-	-	14.63

[1] Assumes average savings of 0.98 AFY per audit based on average savings per audit in 2010, as reported in California American Water's 2010 Conservation Report to the CPUC **(37)**.

Table 6-19. Planned CII Audits

Planned	2011	2012	2013	2014
Number of surveys planned	15	20	20	20
Are incentives planned?	Yes	Yes	Yes	Yes
Number of follow-up visits	-	-	-	-
Projected water savings – AFY[1]	14.63	19.60	19.60	19.60

[1] Assumes average savings of 0.98 AFY per audit based on average savings per audit in 2010, as reported in California American Water's 2010 Conservation Report to the CPUC **(37)**.

The District also provides commercial rebates through CUWCC's Smart Rebate Program. In 2010, rebates were available for HECWs, HETs, high-efficiency urinals (HEUs), pressurized waterbrooms, and x-ray film processor re-circulation systems (37).

6.2.14 BMP 5 LANDSCAPE (DMM E)

According to Section A of the CUWCC MOU, implementation shall consist of at least the following actions (36):

> *Agencies shall provide non-residential customers with support and incentives to improve their landscape water use efficiency. Credit for prior activities, as reported through the BMP database, will be given for documented water savings achieved through 2008.This support shall include, but not be limited to, the following:*
>
> *1) Accounts with Dedicated Irrigation Meters*
>
> *a) Identify accounts with dedicated irrigation meters and assign ETo-based water use budgets equal to no more than an average of 70% of ETo (reference evapotranspiration) of annual average local ETo per square foot of landscape area in accordance with the schedule below.*
>
> *Recreational areas (portions of parks, playgrounds, sports fields, golf courses, or school yards in public and private projects where turf provides a playing surface or serves other high-use recreational purposes) and areas permanently and solely dedicated to edible plants, such as orchards and vegetable gardens, may require water in addition to the water use budget. (These areas will be referred to as "recreational" below.) The water agency must provide a statement designating those portions of the landscape to be used for such purposes and specifying any additional water needed above the water use budget, which may not exceed 100% of ETo on an annual basis.*
>
> *If the California Model Water Efficient Landscape Ordinance is revised to reduce the water allowance, this BMP will be revised automatically to reflect that change.*
>
> *b) Provide notices each billing cycle to accounts with water use budgets showing the relationship between the budget and actual consumption.*

c) Offer site-specific technical assistance to reduce water use to those accounts that are 20% over budget in accordance with the schedule given in Section B; agencies may choose not to notify customers whose use is less than their water use budget.

2) Commercial/Industrial/Institutional (CII) Accounts without Meters or with Mixed-Use Meters

a) Develop and implement a strategy targeting and marketing large landscape water use surveys to commercial/industrial/institutional (CII) accounts with mixed-use meters.

b) In un-metered service areas, actively market landscape surveys to existing accounts with large landscapes, or accounts with landscapes which have been determined by the purveyor not to be water efficient.

3) Offer financial incentives to support 1) and 2) above.

The District offers free large landscape (LL) audits to non-residential customers, including commercial, industrial and institutional customers. The audits are performed by the District's contractor. LL audits are customized and include a detailed outdoor audit. After the audit, the customer is given a detailed report with analysis and recommendations, which includes a site-specific water budget and irrigation schedule. In 2010, the District completed 12 LL audits (37).

Because the District's LL audits are customized, the water savings differs for each site. The total water savings reported for 2010 is the sum of the savings estimated for each of the audits. The average savings per audit was calculated based on the number of surveys performed and the total estimated savings from all the audits.

In 2011, the District is adding a new direct install program to the large landscape audit program. After an LL audit, the customer will receive recommendations and the District will directly install water-saving devices, including irrigation controllers.

The LL audits completed are shown in Table 6-20. The District plans to continue implementation of this BMP, as shown in Table 6-21.

Table 6-20. Actual LL Audits

Actual	2006	2007	2008	2009	2010
Number of surveys completed	-	-	-	1	12
Number of budgets developed	-	-	-	1	12
Number of follow-up visits	-	-	-	-	-
Actual water savings – AFY[1]	-	-	-	0.76	9.17

[1] Assumes average savings of 0.76 AFY per audit based on average savings per audit in 2010, as reported in California American Water's 2010 Conservation Report to the CPUC **(37)**.

Table 6-21. Planned LL Audits

Planned	2011	2012	2013	2014
Number of surveys planned	15	20	20	20
Number of budgets planned	15	20	20	20
Number of follow-up visits	-	-	-	-
Projected water savings – AFY[1]	11.40	15.20	15.20	15.20

[1] Assumes average savings of 0.76 AFY per audit based on average savings per audit in 2010, as reported in California American Water's 2010 Conservation Report to the CPUC **(37)**.

Additionally, the District promotes outdoor water conservation through the California Friendly Drought Tolerant Gardens, described in Section 6.2.7. In 2008, the District began a partnership with the City of Imperial Beach to replace their landscape and irrigation system at the City Hall with a California Friendly Drought Tolerant Garden (48). As described in Section 6.2.7, the demonstration was completed in 2009 and is available for all residents and visitors to the City of Imperial Beach to visit (40).

The District has dedicated irrigation meters, but does not currently assign ETo-based water budgets, except for customers that receive an LL audit.

6.3 BMPS NOT IMPLEMENTED OR NOT SCHEDULED TO BE IMPLEMENTED

Currently BMP 1.1.3 is not being implemented and is not scheduled to be implemented. This BMP is not implemented or scheduled for implementation because it is not applicable to the District as a retail agency.

7 CLIMATE CHANGE

California's Global Warming Solutions Act of 2006 (AB 32) recognized climate change as a "serious threat to the economic well-being, public health, natural resources, and the environment of California" (49). Potential adverse impacts listed include sea level rise and reduced quality and supply of water from the Sierra snowpack (49). Following the passing of AB 32, city and county general plans, California Environmental Quality Act (CEQA) documents, and Integrated Regional Water Management Plans (IRWMPs) must consider climate change. The 2007 San Diego IRWMP does not address climate change, but the IRWMP Update, which is currently being developed using grant funding from DWR, will include a climate change analysis (50).

The 2010 UWMP Act and 2010 UWMP Guidebook do not require climate change considerations in UWMPs, but do recommend considering IRWMP climate change objectives in the UWMP if applicable and available (1). Because the current San Diego IRWMP does not address climate change, the IRWMP cannot be used as a source for this section of the UWMP at this time. When the IRWMP climate change analysis is complete, this UWMP should be updated.

Recognizing that the impact of climate change on urban water systems is uncertain but potentially significant, mitigation and adaptation strategies are presented here to move towards reducing climate change impacts on the District.

7.1 MITIGATION

In the water sector, reducing energy use is the primary way to mitigate climate change (1). This includes energy efficiency, renewable energy generation, and water conservation. Energy is required to move, treat, use, and discharge water; thus, decreasing water use leads to a reduction in overall energy use.

An estimate of the greenhouse gas (GHG) emissions resulting from electricity use for pumping and treating water is carried out in Section 7.1.1 to illustrate potential GHG reduction strategies. The GHG analysis is provided for illustrative purposes and is not comprehensive. The analysis provides an estimate of the GHGs emitted as a result of treating and delivering water to the District's customers, but does not include GHGs associated with treating and discharging wastewater, the fuel use of the vehicle fleet, or the energy use of other District facilities and buildings. For the San Diego County District, the analysis incorporates the GHGs associated with electricity use by the District to distribute water to customers, termed physical energy, and the GHGs associated with the electricity that was used by other agencies to treat and deliver water to the District, termed the embedded energy (51).

(1) Physical Energy: To determine the GHGs associated with the physical energy use, the quantity of electricity currently used (kWh) and the corresponding emission factor for that electricity (lbs CO_2/kWh) must be obtained.

(2) Embedded Energy: Estimating the GHGs associated with the embedded energy of the imported water involves determining the amount of energy (kWh/AF) used to move water from its original source to the District's system, as well as the amount of energy used by other agencies to treat the water. The source of electricity at each location of energy input (e.g. pump station) determines the emissions factor of the electricity that was consumed at that location (lbs CO_2/kWh). The sum of the GHG emissions associated with each location where electricity was consumed yields the total GHG emissions associated with the embedded energy in the water.

The sum of the GHGs associated with the physical energy use and the embedded energy in the water gives a reasonable estimate of the District's GHG emissions associated with pumping and treatment energy. Implementing energy efficiency, renewable energy generation, and/or water conservation has the potential to decrease GHG emissions in the future.

7.1.1 GHG Estimate

A study done by MWD for the Coronado golf course estimated the energy intensity of water delivered to customers in CAW's San Diego County District (32). Assuming an import mix of water from SWP and CRA, the energy use was classified into categories as shown in Table 7-1. The analysis does not consider changes in future supply (for example, desalinated water).

Table 7-1. Energy Intensity of Water Delivered to San Diego County District Customers (32)

Power Use Category	Energy Intensity (kWh/AF)
Source and Conveyance	2,040
Water Treatment	60
Distribution- SDCWA	200
Distribution- City of San Diego	130
Distribution- CAW	100
Total	**2,530**

Table 7-2 shows the amount of energy used in terms of physical energy use and embedded energy. The study attributes approximately 100 kWh/AF of energy to distribution by the District. This is the physical energy usage. Approximately 2,430 kWh/AF is used by other agencies to obtain, deliver, and treat the water used by the District. Note that this total energy use includes only pumping and treatment energy. This is the embedded energy in the water.

Table 7-2. Physical and Embedded Energy Intensity of Water Delivered to the San Diego County District (32)

Energy Use	Energy Intensity (kWh/AF)
Physical energy	100
Embedded energy	2,430
Total	**2,530**

The electricity is provided by various electric utilities as the water is moved from the Delta (SWP) and the Colorado River (CRA) through the various water systems to the San Diego County District. For this UWMP, an estimate of the average emissions factor for electricity consumed in California is used. The emissions factor is estimated to be 0.9 lbs CO2/kWh based on the electric power emissions and electricity consumed in California from 2000 to 2008 (52). This factor is used to estimate the historical emissions (1998-2010) associated with both physical energy use and embedded energy.

In 2009, the CPUC sponsored a study to forecast future GHG emissions from California's electricity sector through 2020 (53). The accelerated policy case in the report assumes the state's Renewable Portfolio Standard (RPS) of 33% renewable generation by 2020 is achieved and estimates that the emissions factor will drop to 0.507 lbs CO2/kWh in 2020 (53). For GHG projections, linearly interpolation was used to estimate the emissions factors for years between 2010 and 2020, assuming 0.9 lbs CO2/kWh for 2010 and 0.507 lbs CO2/kWh for 2020. The emissions factor for 2020 forward is assumed to be 0.507 lbs CO2/kWh.

Using the historical water use, along with the estimated emissions factors and energy use described above, historical GHG emissions for the District were estimated. Figure 7-1 shows the estimated GHG emissions of the District from 1998 through 2010. Future GHG emissions assuming SB7 targets are achieved and the electricity emissions factor decreases to 0.507 lbs CO2/kWh by 2020 are shown in Figure 7-2. A summary of the assumptions used to generate Figure 7-1 and Figure 7-2 are listed below:

(1) For all years shown (1998-2030), 100% of supply is assumed to come from the City of San Diego.
(2) The energy intensity of the supply, including treatment, is assumed to be constant at 2,430 kWh/yr, which does not take into account planned changes in the water supply portfolios of MWD, SDCWA or the City of San Diego.
(3) The energy used by California American Water for distribution within the District is assumed to be constant at 100 kWh/AF. This does not take into consideration renewable energy generation by the District, such as hydropower or solar photovoltaic (PV) systems.
(4) The emissions factor for all electricity used from 1998-2010, including that used by the SWP, MWD, SDCWA, the City of San Diego and the District, is assumed to be constant at 0.9 lbs CO2/kWh.

(5) The emissions factor for all electricity used is assumed to decrease to 0.507 lbs CO2/kWh by 2020 due to RPS targets. Linearly interpolation was used to estimate the emissions factors for years between 2010 and 2020, assuming 0.9 lbs CO2/kWh for 2010 and 0.507 lbs CO2/kWh for 2020. The emissions factor for 2020 forward is assumed to be 0.507 lbs CO2/kWh.

(6) The production for years 1998-2010 is based on data provided by California American Water. The production for years 2011-2030 is calculated based on projected population (shown in Figure 2-2) and calculated gpcd based on SB7 requirements (shown in Figure 3-1).

(7) The GHG estimates include those associated with pumping and water treatment energy use only and do not include emissions associated with wastewater treatment and discharge, fuel use of vehicles, or energy use of other facilities and buildings; thus, the GHG estimates do not represent the total GHG footprint for the District.

(8) A value of 100% is equivalent to approximately 14,000 tons CO2, which represents the average calculated annual emissions over the years 2006-2010.

(9) GHGs were estimated based on available data and are intended to be used for illustrative purposes only.

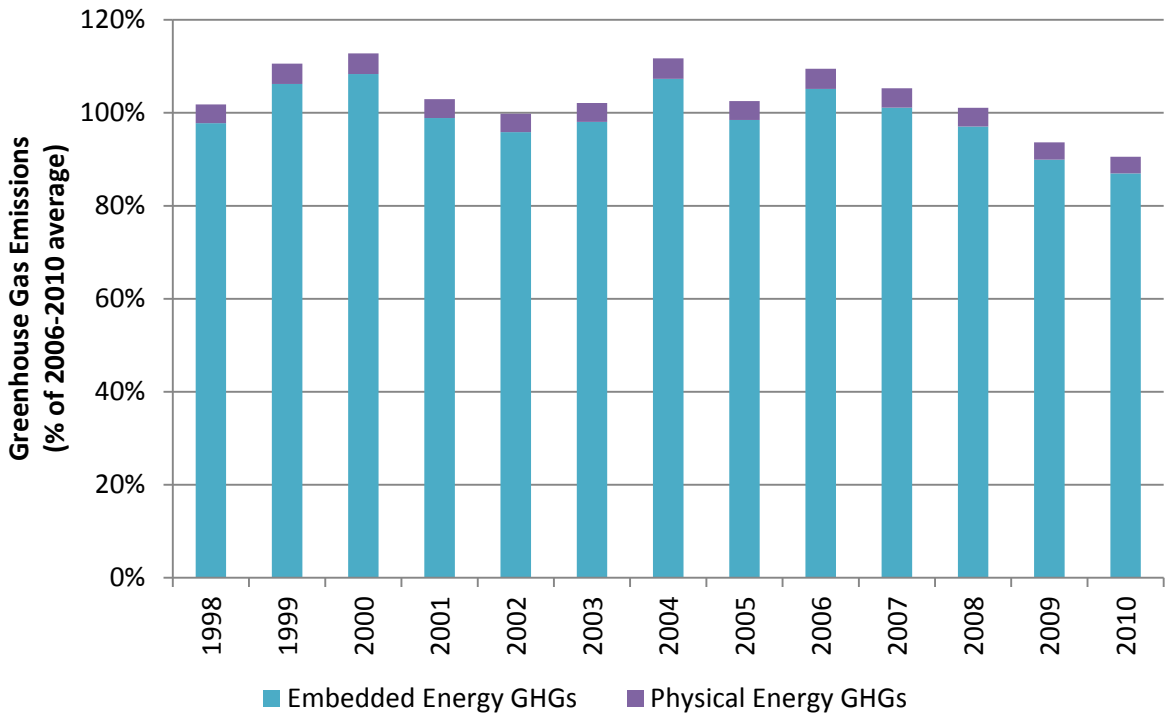


Figure 7-1. Estimated GHG Emissions for the San Diego County District for 1998-2010

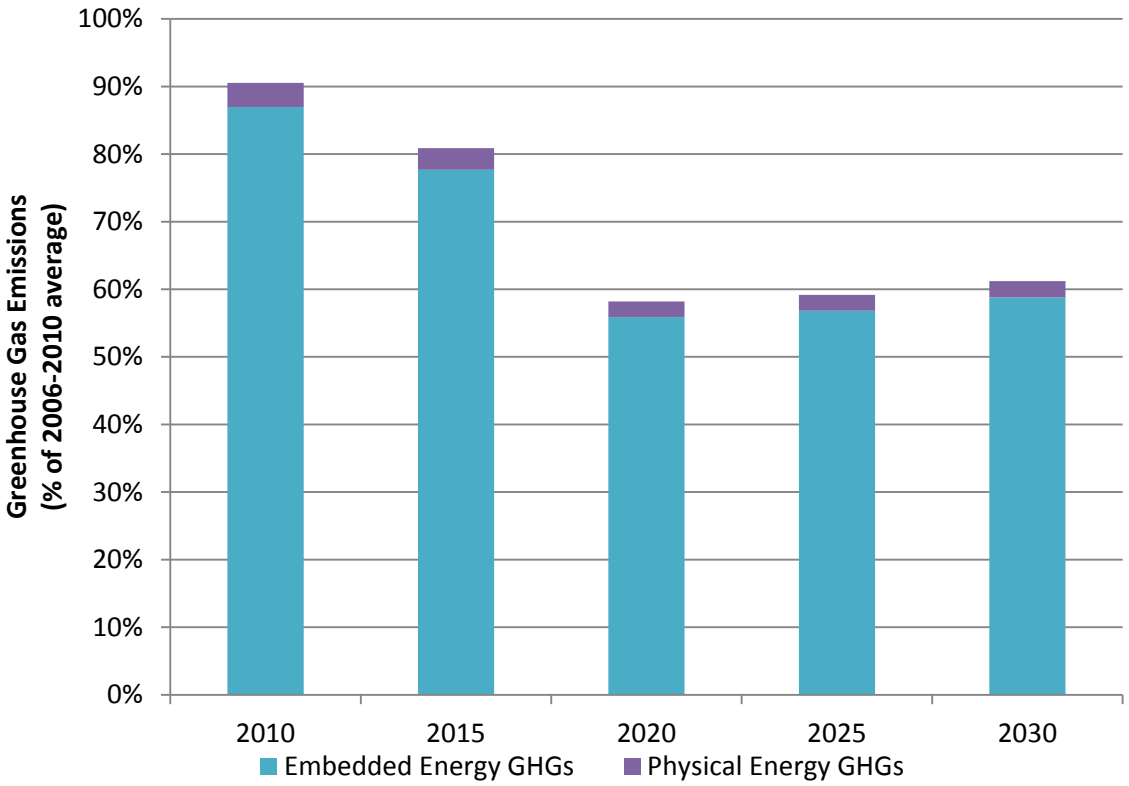


Figure 7-2. Estimated Current and Projected GHG Emissions for 2010-2030 for the District Assuming SB7 Targets and Reduced Emissions Factors due to RPS

Looking ahead at future scenarios provides insight into mitigation strategies. Three scenarios for 2020 are illustrated in Figure 7-3:

(1) Status quo (assumes SB7 targets and reduced electricity emissions factors due to RPS goals (0.507 lbs CO2/kWh by 2020) as described above).
(2) Status quo with 10% increase in energy efficiency by the District and wholesalers by 2020.
(3) Status quo with renewable generation by the District (30,000 kWh/year from solar PV and 500,000 kWh/year from in-conduit hydropower by 2020), in addition to 10% increase in energy efficiency by the District and wholesalers by 2020.

Like the figures above, GHG emissions in Figure 7-3 are shown as a percentage of the average calculated annual emissions over the most recent 5-year period, 2006-2010, which is estimated to be approximately 14,000 tons CO2.

Figure 7-3 shows that in addition to water conservation, energy efficiency is a powerful GHG mitigation strategy. After energy efficiency improvements are made, renewable generation by the District can provide further GHG reductions and new revenue opportunities.

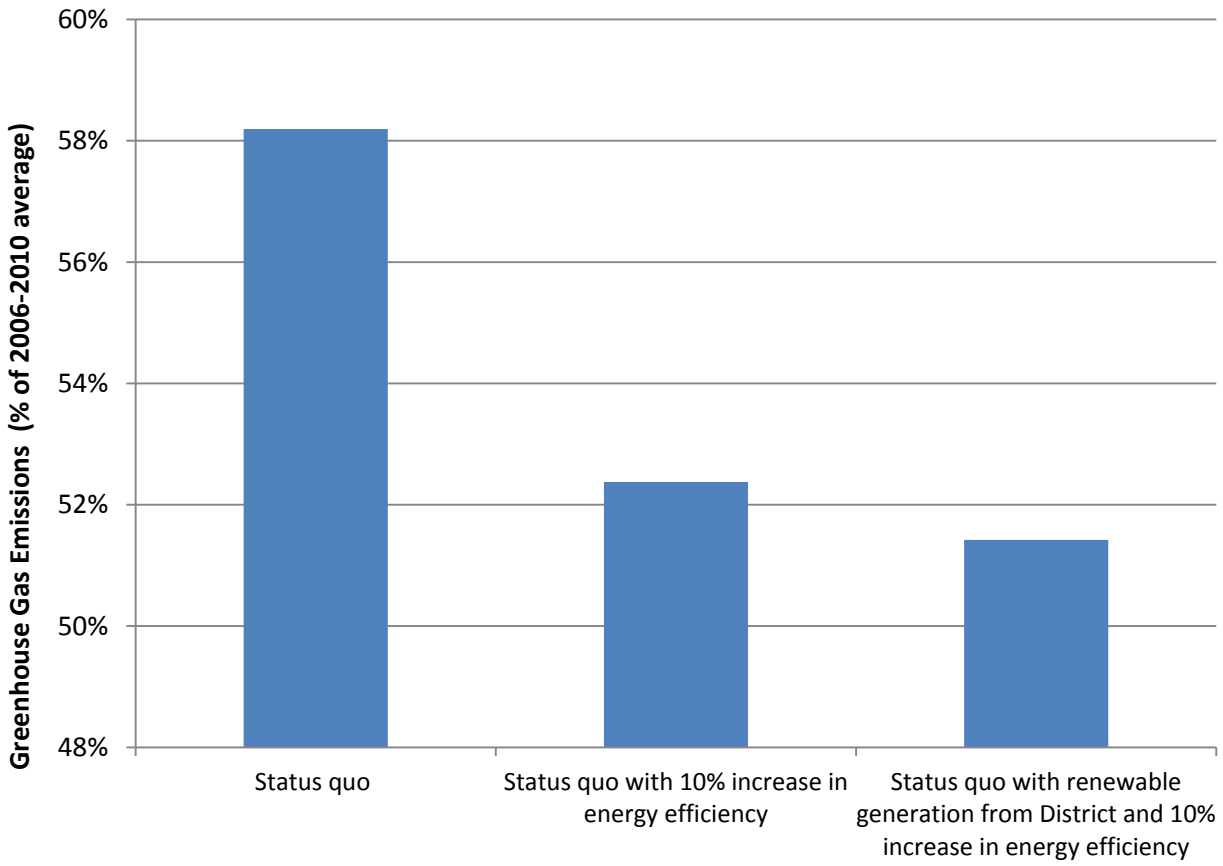


Figure 7-3. GHG Mitigation Scenarios Example

7.2 ADAPTATION

While the exact effects of climate change are uncertain, climate change will undoubtedly impact the San Diego County District over the long term. For example, DWR expects that climate change will affect water demand, water supply and quality, sea level, and frequency of natural disasters statewide (1).

DWR recommends that water agencies consider the following climate change effects when establishing long-term plans, as shown in Table 7-3 (1):

Table 7-3. Potential Effects of Climate Change on Water Systems (1)

Climate Change	Potential Effect on Water System
Hotter days and nights, longer irrigation season, increase in landscaping water needs, increased cooling water needs for power plants and industrial facilities	Increased water demand
Reduced snowpack, earlier spring runoff, increased potential for algal bloom	Reduced or compromised supply (lower water quality)
Sea level rise, more extreme tides	Compromised supply; Stress on levees near sea; increased potential for seawater intrusion in coastal aquifers
Increased frequency and severity of natural disasters (including droughts, floods, wildfires)	Larger variability in supply; Increased stress on infrastructure

In the California Water Plan Update 2009, DWR considers 12 different climate change scenarios to predict water demand changes for three growth scenarios (54). Each climate change scenario has separate estimates of future precipitation and temperature. When climate change is considered, all three growth scenarios showed higher annual water demands than under a repeat of historical climate (54).

7.2.1 Adaptive Management

The effects of climate change on the San Diego County District are difficult to predict due the complexity of factors, including the uncertainty in future temperature, the District's close proximity to the ocean and the District's reliance on water that is transported from distant areas through multiple water agency systems. Dealing with uncertainties like these requires an approach that is both flexible and robust. The recommended method to adapt to climate change effects on water systems is adaptive management. While adaptive management has been used in traditional water supply planning (55), it is also capable of integrating climate change uncertainties into water system management. The goal of adaptive management is to, "embrace uncertainty, accepting partial understanding of processes, and producing policies and designs that are less sensitive to the unexpected" (55).

Adaptive management is a continuous cycle consisting of four steps: (1) plan, (2) act, (3) monitor, and (4) evaluate, as shown in Figure 7-4 (55).

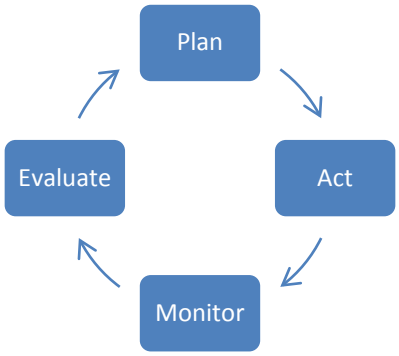


Figure 7-4. Adaptive Management Process

Evaluation results feed back into planning and the iteration process continues, yielding a closed-loop management process. This framework encourages future decisions that are based on actual results.

Table 7-4 shows three possible climate change effects that could impact the San Diego County District and how the adaptive management process could be used to respond to them.

Table 7-4. Adaptive Management Scenarios

Example	Plan	Act	Monitor	Evaluate
Prolonged Drought in Colorado River	Exports from Colorado River Aqueduct may decrease; Identify alternative sources of water supply	Pursue water transfers; Partner with cities to pursue On-site Water Recycling to produce recycled water for irrigation to reduce potable water demand	Evaluate feasibility, reliability and cost-effectiveness of alternative supplies	Determine whether long-term agreements for water transfers are feasible; Use results to plan for future droughts
Flood in Delta	Island flooding could reduce SWP exports; Identify other sources of supply, including desalinated water opportunities	Secure desalinated water supplies from Sweetwater Authority or Otay Water District; participate in regional initiatives	Evaluate reliability and cost-effectiveness of supply	Determine if desalinated water is a preferred long-term supply alternative; Use results to plan for future floods
Increased Temperature & Demand	Identify and predict periods of increased temperature; Develop potential alternatives to increase supply and/or decrease demand	Implement potential alternatives (e.g. implement water conservation programs, secure other sources of supply)	Collect data on success of water conservation programs; Monitor cost-effectiveness of chosen alternative supplies	Determine if increased demand was caused by increased temperatures or other factors; Use results to plan for future periods of high temperature

Related to the second scenario discussed in Table 7-4, DWR has recently published the Delta Risk Management Strategy Phase 2 report, which evaluates scenarios to reduce the risk of water export disruption associated with Delta levee failures (56). The report evaluates the impacts of major flood and seismic events in the Delta and identifies three major impacts of such events: (1) in-Delta losses, (2) loss of transportation and utility services, and (3) loss of water for export. The report concludes that reducing the risk to freshwater exports has the greatest statewide economic benefit (56). DWR's efforts to reduce risks to exports from the Delta will benefit the District and will help to mitigate potential climate change impacts, like increased flooding.

As the District encounters climate change impacts, employing the adaptive management process allows the District to manage these impacts on a continuous basis by evaluating alternatives, testing hypotheses, determining causes, and incorporating results into planning. Throughout this process, regional cooperation is an essential component of the District's long-term water resource management strategy.

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APPENDIX A. BASELINE DAILY PER CAPITA USE MEMORANDUM

Technical Memorandum

Date: 7/5/2011

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CC: Chris Mattis; Monica Na; Patrick Pilz

Prepared by: Lianne Williams, E.I.T.

Reviewed by: Jeffery Szytel, P.E.

Project: 2010 Urban Water Management Plan for the Southern Division- San Diego County District

SUBJECT: **BASELINE DAILY PER CAPITA WATER USE**

This memorandum presents the procedure used by California American Water's Southern Division San Diego County District to meet the requirements of Senate Bill x 7-7 (SB7) as defined in the Water Conservation Act of 2009 and incorporated into Division 6 of the California Water Code, commencing with Section 10608 of Part 2.55.

Background

On November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill x 7-7 into law. The legislation requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015. The legislation requires each urban water supplier to develop, and include in its Urban Water Management Plans (UWMPs), estimates of: 1) *baseline* daily per capita water use; 2) daily per capita water use *target*; 3) daily per capita water use *interim target*; and 4) *compliance* daily per capita water use. The UWMP must also include bases for determining the estimates, with references to supporting data. However, SB 7 did not include a detailed description of the allowable methodologies for determining the required values. Instead, it required California Department of Water Resources (DWR) to develop appropriate methodologies and criteria, and to make them available to water suppliers no later than October 1, 2010. In consideration of this delay, the bill extended the deadline for adoption of the 2010 UWMP to July 1, 2011.

In connection with preparation of California American Water's San Diego County District 2010 UWMP update, California American Water hired Water Systems Consulting, Inc. (WSC) to develop the required estimates described by SB 7. Consistent with the requirements outlined in DWR's *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, compliance is calculated for the San Diego County District as a whole. California American Water directed WSC to apply methodologies consistent with those described in the *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* guidebook

(Methodologies Guidebook). The selected procedure used to develop the required SB7 estimates includes the following basic steps:

1. Calculate baseline water use, which is the average gross daily water use per capita, reported in gallons per capita per day, based on gross water use and District population for a continuous 10-year period ending no earlier than December 31, 2004
2. Calculate urban water use target using one of the four methods described below
3. Check and confirm the urban water use target using the five-year running average
4. Calculate the interim urban water use target (equal to the average of the baseline and confirmed urban water use target)
5. Calculate the compliance daily per capita water use (equal to the gross daily water use per capita during the final year of the reporting period (i.e. 2010))

DWR allows the urban water supplier to choose one of four different methods to calculate the urban water use target in Step 2 above.

- **Method 1** involves calculating the target based on 80% of baseline daily per capita water use and the interim target based on 90% of the baseline daily per capita water use.
- **Method 2** involves calculating the per capita daily water use by using the sum of performance standards applied to indoor residential use, landscaped area water use, and commercial, industrial, and institutional uses.
- **Method 3** calculates the water use target as 95% of the applicable state hydrologic region target as stated in the draft 20x2020 Water Conservation Plan. California American Water's San Diego County District is located in the South Coast hydrologic region as defined in the State's 20x2020 Water Conservation Plan.
- **Method 4** is an approach developed by DWR to estimate water savings factors associated with implementation of various conservation measures. The water savings factors are used to calculate water use targets. Attachment 1 and 2 show the input and calculation spreadsheets for Method 4.

Gross Water Use

SB 7 defines gross water use as:

> *"The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following: (1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier; (2) The net volume of water that the urban retail water supplier places into long-term storage; (3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.; (4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24."*

Purchased water is the only source of water in California American Water's San Diego County District. From 1998 through the present, California American Water has not stored any water long-term or sold any water to other agencies. Therefore, gross water use is simply the total water purchased by California American Water.

Population

GIS shapefiles with census populations by census block were obtained from the San Diego Association of Governments (SANDAG) and the United States Census Bureau, for 1990, 2000 and 2010. These GIS shapefiles contained census populations separated into census blocks covering the San Diego region. Although spatial population distribution within each census block can vary based on development and land use patterns, WSC assumed that the distribution of population within each census block was uniform. The California American Water service area boundaries were intersected with the census block boundaries to calculate the area of each block within California American Water's service areas. WSC then applied a persons per acre factor, determined from the relevant Census, to each intersecting block. Finally, the calculated population of each block within California American Water's service area was summed up to provide populations by service area for 1990, 2000, and 2010. Linear interpolation was used to determine the population for years in between the census years. Populations for 1994 through 1999 were calculated by linear interpolating between the 1990 and 2000 census populations. Populations for 2001 through 2009 were calculated by linear interpolating between the 2000 and 2010 census populations.

In 2010, there were approximately 13,888 census blocks within the San Diego County District. Figure 1 shows the 2010 census blocks in relation to California American Water's service area boundaries.

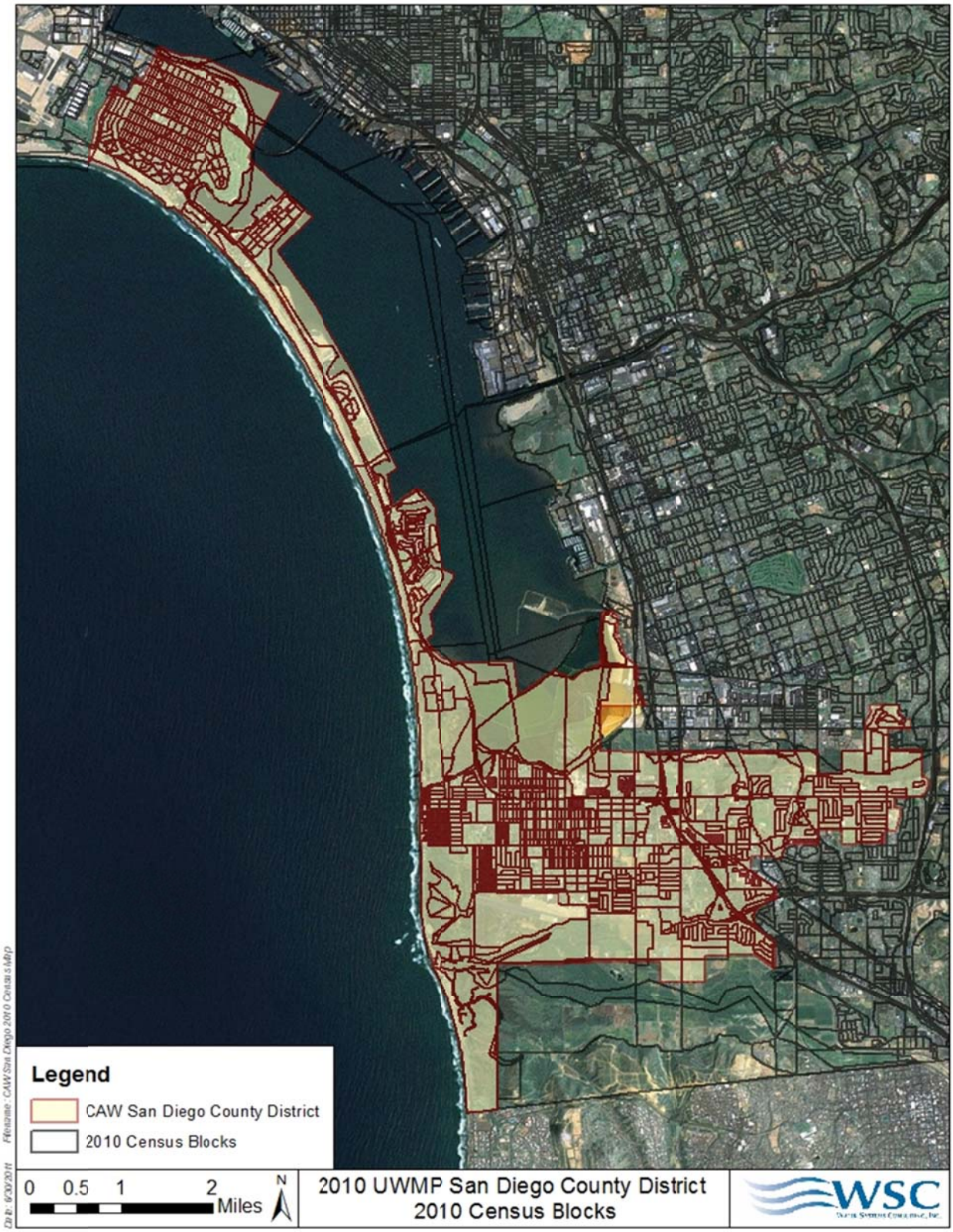


Figure 1. California American Water Service Area Boundaries with 2010 Population Data

Baseline Per Capita Water Use

WSC calculated per capita water use using gross water use values and the population estimates shown in Table 1. The annual per capita water use value was averaged across 10-year periods ranging from 1998-2007 through 2001-2010. Figure 2 shows the historical population estimates, along with the annual per capita water use for the years 1998 through 2010.

Table 1. Baseline Daily Per Capita Water Use

Calendar Year	Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)	10 year running average (gpcd)
1994	95,827	n/a	n/a	
1995	96,165	n/a	n/a	
1996	96,504	n/a	n/a	
1997	96,842	n/a	n/a	
1998	97,180	11	116	
1999	97,519	12	125	
2000	97,857	12	127	
2001	97,607	11	117	
2002	97,357	11	113	
2003	97,108	11	116	
2004	96,858	12	128	
2005	96,608	11	117	
2006	96,358	12	126	
2007	96,109	12	121	121
2008	95,859	11	117	121
2009	95,609	10	108	119
2010	95,359	10	105	117
Baseline Daily Per Capita Water Use				**121**

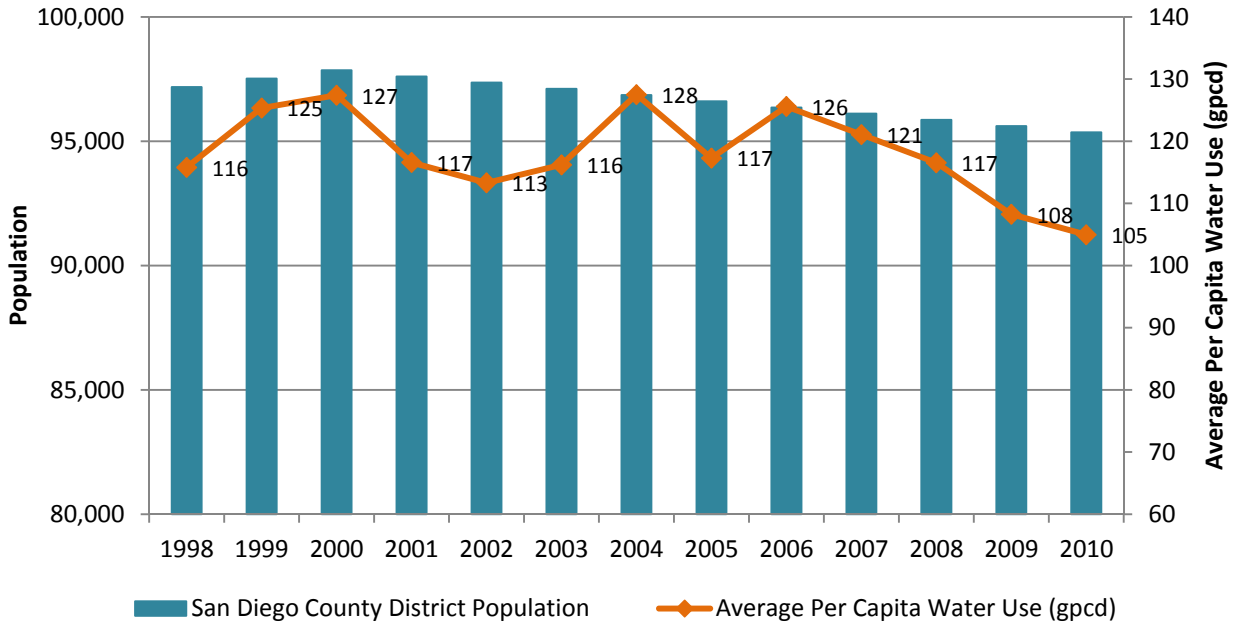


Figure 2. Historical Population and Per Capita Water Use for the San Diego County District

Water Use Targets

The per capita water use target estimates are calculated using Method 1, Method 3, and Method 4 from the Methodologies Report. Method 2 was not applied because data for all landscape parcels in the District was not available. Table 2 shows the estimated daily per capita water use targets for each method analyzed.

Table 2. Daily Per Capita Water Use Targets

Calculation Method	Water Use Target (gpcd)
Method 1: 80% of Baseline Per Capita Water Use	97
Method 2: Performance Standards	Not calculated
Method 3: 95% of Regional Target	142
Method 4: DWR Approach	97
Selected Urban Water Use Target	**142**

Minimum Water Use Reduction Requirements

The selected target must be less than 95% of a selected five-year running average ending no earlier than December 31, 2007 and ending no later than December 31, 2010 per the requirements of California Water Code Section 10608.22. Table 3 shows the five-year running averages, with the selected 5-year running average of 122 gpcd. Table 4 shows that the selected target from Table 2 does not meet the minimum water use reduction requirement; that is, the selected target of 142 gpcd is not less than 95% of 122 gpcd. Thus, the confirmed water use target must be set to 95% of 122 gpcd, which is equal to 116 gpcd. Table 5 shows the final baseline, compliance, interim target, and target per capita water use. Table 6 shows the status of meeting the interim target and target based on current compliance per capita water use. The values shown will be reported in California American Water's 2010 San Diego County District UWMP.

Table 3. Minimum Water Use Reduction

Calendar Year	Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)	5 year running average
2003	97,108	11	116	
2004	96,858	12	128	
2005	96,608	11	117	
2006	96,358	12	126	
2007	96,109	12	121	122
2008	95,859	11	117	122
2009	95,609	10	108	118
2010	95,359	10	105	115
5-Year Baseline Daily Per Capita Water Use				**122**

Table 4. Target Confirmation

Parameter	Value
Selected Urban Water Use Target (gpcd)	142
95% of 5-year Baseline Daily Per Capita Water Use (gpcd)	116
Selected Urban Water Use Target < 95% of 5-year Base GPCD	No
Confirmed Urban Water Use Target (gpcd)	**116**

Table 5. Baseline, Compliance, Interim Target, and Target Water Use

Parameter	Water Use (gpcd)
Baseline Daily Per Capita Water Use	121
2010 Daily Per Capita Water Use	105
2015 Interim Urban Water Use Target	118
2020 Urban Water Use Target	116

Table 6. Water Use Reduction Status

Water Use Reduction (on gpcd basis)	% Reduction[1]
Achieved by 2010	13.0%
Needed to meet 2015 target	-12.5%
Needed to meet 2020 target	-10.1%
[1] A negative % means the compliance is currently lower than the target.	

Figure 3 shows the historical, baseline, targets, compliance, and projected per capita water use for the San Diego County District.

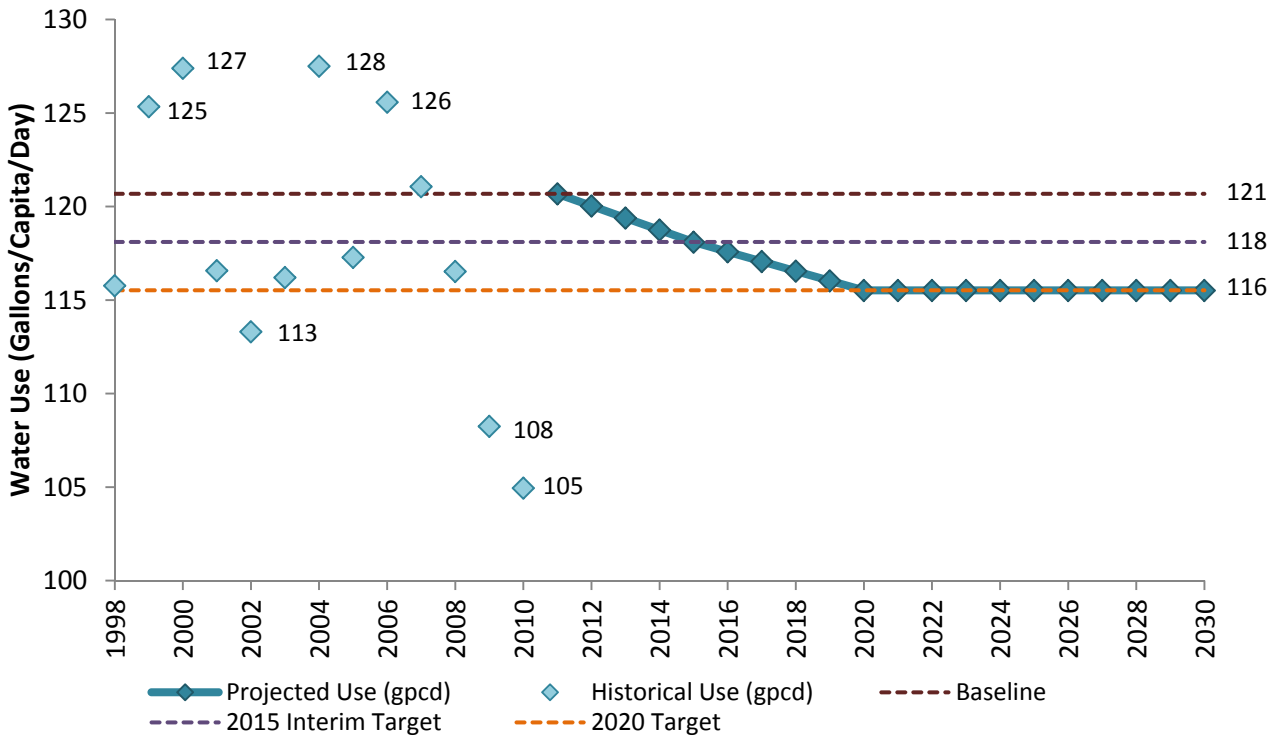


Figure 3. Historical Per Capita Water Use, Baseline, and Targets

Attachment 1- User Input for Method 4

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): * Calculate Targets Using Default Indoor Residential Savings

* = Required Data

Water Supplier Name: * California American Water San Diego District

10-15 Year Baseline Water Use Information

Baseline Period: * 1999-2008

Midpoint of Baseline Period: 2003

Baseline Water Use GPCD: * 121.0

Population in Midpoint Year: * 97,108

5 Year Baseline Water Use Information

Baseline Period: * 2004-2008

Baseline Water Use GPCD: * 122.0

95% of 5-Year Baseline GPCD: 115.9

Unmetered Connections

Number of Unmetered Connections in 2003: * 0

Water Use By Unmetered Connections In 2003: * 0 Acre-Feet

Baseline CII Water Use[1]

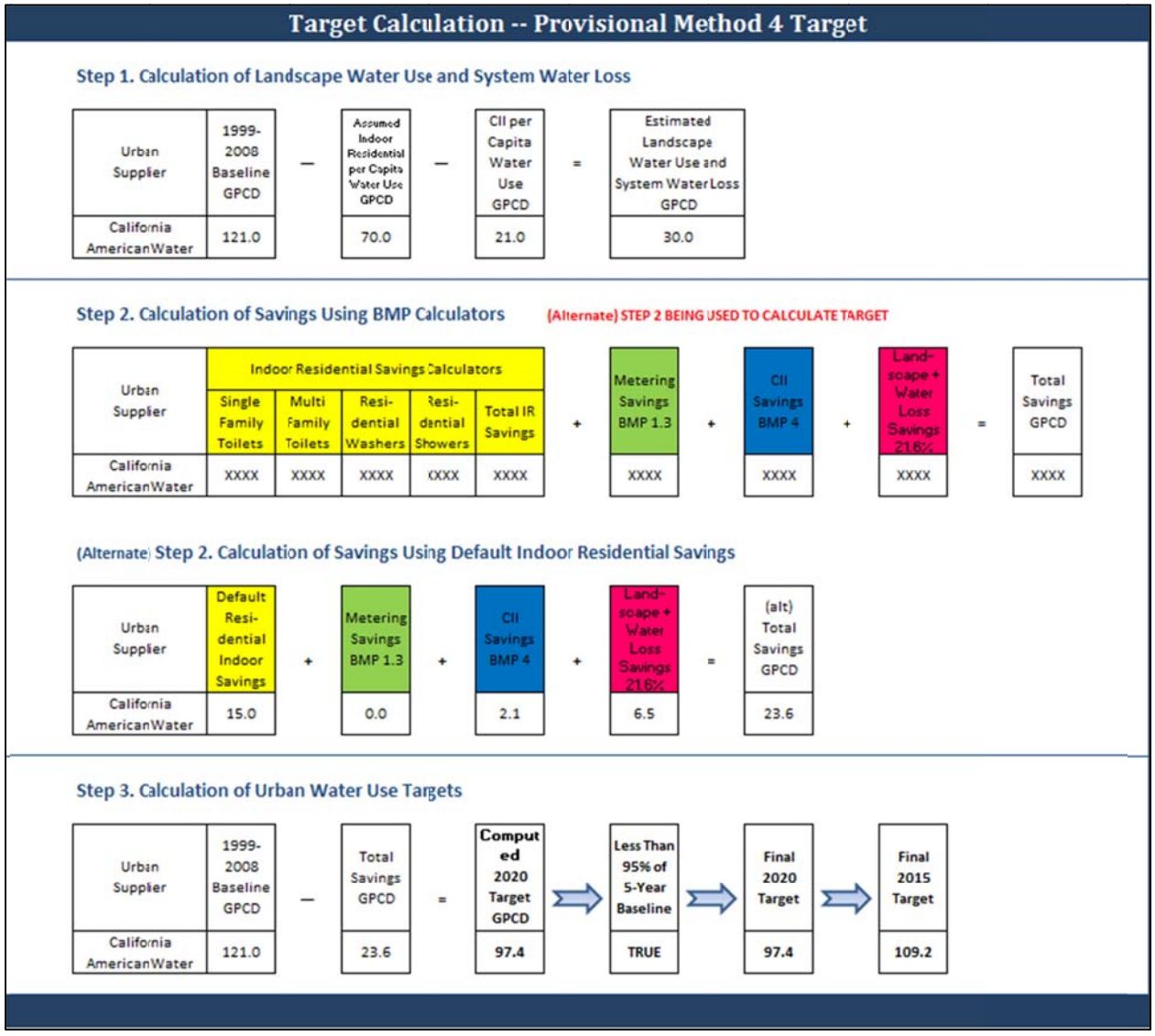
CII Water Use in 2003: * 2,286 Acre-Feet

Per Capita Use: 21.0 GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.
Go to the "Calculated Targets" worksheet.

Attachment 2- Calculator for Method 4



Target Calculation -- Provisional Method 4 Target

Step 1. Calculation of Landscape Water Use and System Water Loss

Urban Supplier	1999-2008 Baseline GPCD	–	Assumed Indoor Residential per Capita Water Use GPCD	–	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
California AmericanWater	121.0		70.0		21.0		30.0

Step 2. Calculation of Savings Using BMP Calculators (Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
California AmericanWater	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

(Alternate) Step 2. Calculation of Savings Using Default Indoor Residential Savings

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
California AmericanWater	15.0		0.0		2.1		6.5		23.6

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1999-2008 Baseline GPCD	–	Total Savings GPCD	=	Computed 2020 Target GPCD	⇒	Less Than 95% of 5-Year Baseline	⇒	Final 2020 Target	⇒	Final 2015 Target
California AmericanWater	121.0		23.6		97.4		TRUE		97.4		109.2

APPENDIX B. CPUC RULE 14.1

Rule No. 14.1-SD

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

A. TERRITORY

This rule is applicable within the Southern Division of California American Water Company, which includes the Coronado District, the Los Angeles District and the Village District. All others served by California American Water Company are excluded from this particular rule, but are included in separate and distinct Water Conservation and Plans.

B. GENERAL INFORMATION

1. The conservation program of this Rule will become applicable beginning the effective date of AL 772 and will remain in effect until such time that the Commission authorizes its de-activation. Mandatory conservation will only occur by Commission approval of a separate Tier 2 advice letter as outlined in Section E of this Rule.

2. A reliable minimum supply of potable water is essential to the public health, safety and welfare of the people and economy of the Southern California region.

3. Southern California is a semi-arid region and is largely dependent upon imported water supplies. A growing population, climate change, environmental concerns, and other factors in other parts of the State and western United States, make the region highly susceptible to water supply reliability issues.

4. Careful water management that includes active water conservation measures not only in times of drought, but at all times, is essential to ensure a reliable minimum supply of water to meet current and future water supply needs.

5. Article X, Section 2 of the California Constitution declares that the general welfare requires that water resources be put to beneficial use; waste or unreasonable use or unreasonable method of use of water be prevented; and conservation of water be fully exercised with a view to the reasonable and beneficial use thereof.

6. California Water Code section 375 authorizes water suppliers to adopt and enforce a comprehensive water conservation program to reduce water consumption and conserve supplies.

7. The adoption and enforcement of a water conservation program is necessary to manage California American Water Company's Southern Division's potable water supply in the short and long-term and to avoid or minimize the effects of drought and shortage within California American Water Company's Southern Division's service areas. Such a program is essential to ensure a reliable and sustainable minimum supply of water for the public health, safety and welfare.

(N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

B. GENERAL INFORMATION (Continued)

(N)

8. The purpose of this Rule is to establish a water conservation program that will reduce water consumption within California American Water Company's Southern Division's service area through conservation, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within California American Water Company's Southern Division's service area to avoid and minimize the effect and hardship of water shortage to the greatest extent possible.

9. This Rule establishes permanent water conservation standards intended to alter behavior related to water use efficiency at all times and further establishes three levels of water supply shortage response actions to be implemented during times of declared water shortage or declared water shortage emergency, with increasing restrictions on water use in response to worsening drought or emergency conditions and decreasing supplies..

10. Prior to declaration of mandatory conservation, a utility may request authorization of a Schedule 14.1 – Staged Mandatory Water Conservation tariff, via a Tier 2 advice letter.

11. If, in the opinion of the utility, more stringent water measures are required, the utility shall request Commission authorization to implement the staged mandatory conservation measures set forth in Sections E through H.

12. The utility shall file a Tier 1 advice letter to request activation of a particular stage of Schedule 14.1 – Staged Mandatory Water Conservation tariff.

    a. If a Declaration of Mandatory Conservation is made by utility or governing agency, or

    b. If the utility is unable to address voluntary conservation levels set by itself, supplier, or governing agency, or

    c. If the utility chooses to subsequently activate a different stage.

13. When Schedule 14.1 is in effect and the utility determines that water supplies are again sufficient to meet normal demands in accordance with the permanent conservation requirements set forth in Section D, and mandatory conservation measures are no longer necessary, the utility shall seek Commission approval via a Tier 1 advice letter to de-activate the particular stage of mandatory conservation that had been authorized.

14. The utility shall make available to its customers water conservation kits as required by its version of Rule 20. The utility shall notify all customers of the availability of conservation kits via a bill message or direct mailers.

(N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

C. DEFINITIONS

1. "Authorizing Agency" means any agency that supplies, controls or allocates the water supply to California American Water Company or any governmental body that authorizes the Company to produce and sell water in the service area, or California American Water Company itself if acting in accordance with Section G of this Rule.

2. "Billing unit" means the unit of water used to apply water rates for purposes of calculating water charges for a person's water usage and equals 100 cubic feet.

3. "Historical base period" means the period of time established by an Authorizing Agency against which declared water use reductions are to be measured.

4. "Landscape irrigation system" means an irrigation system with pipes, hoses, spray heads, or sprinkling devices that are operated by hand or through an automated system.

5. "Large landscape areas" means a lawn, landscape, or other vegetated area, or combination thereof, equal to more than one (1) acre of irrigable land.

6. "Potable water" means water which is suitable for drinking.

7. "Recycled water" means the reclamation and reuse of non-potable water for beneficial use as defined in Title 22 of the California Code of Regulations.

8. "Person" means any natural person or persons, corporation, public or private entity, governmental agency or institution, or any other user of water provided by the California American Water Company

9. "Single pass cooling systems" means equipment where water is circulated only once to cool equipment before being disposed. (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

D. CONSERVATION - NON-ESSENTIAL OR UNAUTHORIZED WATER USE
The following water conservation requirements are effective at all times until deactivation is authorized by the Commission. Violations of this section will be considered waste and an unreasonable use of water.

1. Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 9:00 a.m. and 5:00 p.m. on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for the express purpose of adjusting or repairing an irrigation system.

2. Limit on Watering Duration: Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a 70% efficiency standard.

3. No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.

4. No Washing Down Hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.

5. Obligation to Fix Leaks, Breaks or Malfunctions: Excessive use, loss or escape of water through breaks, leaks or other malfunctions in the water user's plumbing or distribution system for any period of time after such escape of water should have reasonably been discovered and corrected and in no event more than seven (7) days after receiving notice from California American Water Company, is prohibited.

6. Re-circulating Water Required for Water Fountains and Decorative Water Features: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

7. Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility. (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

D. CONSERVATION - NON-ESSENTIAL OR UNAUTHORIZED WATER USE (continued)
The following water conservation requirements are effective at all times until de-activation is authorized by the Commission. Violations of this section are considered waste and an unreasonable use of water.

8. Drinking Water Served Upon Request Only: Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested. Establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

9. Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services: Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

10. No Installation of Single Pass Cooling Systems: Installation of single pass cooling systems is prohibited in buildings requesting new water service.

11. No Installation of Non-re-circulating Water Systems in Commercial Car Wash and Laundry Systems: Installation of non-re-circulating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

12. Restaurants Required to Use Water Conserving Dish Wash Spray Valves: Food preparation establishments, including but not limited to restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

13. Use of potable water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public, is prohibited;

14. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used , is prohibited.

15. Use of potable water for construction purposes unless no other source of water or other method can be used, is prohibited;

16. Use of potable water for street cleaning, is prohibited;

17. Operation of commercial car washes without recycling at least 50% of the potable water used per cycle, is prohibited; and (N)

18. Use of potable water to flush hydrants, except where required for public health or safety, is prohibited.

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

E. STAGED MANDATORY CONSERVATION OF WATER USAGE

1. Prior to declaration of mandatory conservation, a utility may request authorization of a Schedule 14.1 – Staged Mandatory Water Conservation tariff, via a Tier 2 advice letter, with full justification. The utility may not institute Schedule 14.1 until it has been authorized to do so by the Commission.
   a. A staged Schedule 14.1 that has been authorized by the Commission shall remain dormant until triggered by specific conditions detailed in the Schedule 14.1 tariff and utility has requested and received authorization for activating a stage by Commission.
   b. Notice of the Tier 2 advice letter and associated public participation hearing shall be provided to customers under General Order (GO) 96-B rules.
   c. Utility shall comply with all requirements of Sections 350-358 of the California Water Code.
   d. The Tier 2 advice letter requesting institution of a Schedule 14.1 shall include but not be limited to:
      i. Proposed Schedule 14.1 tariff, which shall include but not be limited to:
         1. Applicability,
         2. Territory applicable to,
         3. A detailed description of each Stage of Conservation,
         4. A detailed description of the Trigger that Activates each Stage of Conservation,
         5. A detailed description of each water use restriction for each Stage of Conservation.
         6. Water use violation levels, written warning levels, associated fines, and exception procedures,
         7. Conditions for installation of a flow restrictor,
         8. Charges for removal of flow restrictors, and
         9. Special Conditions
      ii. Justification for, and documentation and calculations in support of plan, including but not limited to each item in E.1.d.i above.
2. Number of Stages requested by each utility/district may vary, depending on specifics of water shortage event.
3. The utility shall file a Tier 1 advice letter to request activation of a particular stage of Schedule 14.1 – Staged Mandatory Water Conservation tariff.
   a. If a Declaration of Mandatory Conservation is made by utility or governing agency,
   b. If the utility is unable to address voluntary conservation levels set by itself or governing agency, or
   c. If the utility chooses to subsequently activate a different stage.

(N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

E. STAGED MANDATORY CONSERVATION OF WATER USAGE (continued) (N)

4. The Tier 1 advice letter requesting activation of a Schedule 14.1 shall include but not be limited to:
   a. Justification for activating this particular stage of mandatory conservation, as well as period during which this particular stage of mandatory conservation measures will be in effect.
   b. When the utility requests activation of a particular Stage, it shall notify its customers as detailed in Section K, below.
5. All monies collected by the utility through water use violation fines shall not be accounted for as income.
6. All expenses incurred by utility to implement Rule 14.1 and Schedule 14.1 that have not been considered in a General Rate Case or other proceeding, shall be recoverable by utility if determined to be reasonable by Commission.
   a. These monies shall be accumulated by the utility in a separate memorandum account for disposition as directed or authorized from time to time by the Commission.

F. STAGE 1 MANDATORY CONSERVATION

1. A Stage 1 Water Conservation exists when an Authorizing Agency determines that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by an Authorizing Agency that water usage should be reduced by 10.01-20% of a historical base period, or that the Permanent Requirements in Section D are ineffective in complying with an Authorizing Agency reduction of 0-10% after three months, California American Water Company will implement the mandatory Stage 1 Conservation measures identified in this section, after authorized by the Commission.
2. Additional Water Conservation Measures: In addition to the prohibited uses of water identified in Section D, the following water conservation requirements apply during a declared Stage 1 Water Conservation: (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

F. STAGE 1 MANDATORY CONSERVATION (continued) (N)

2. Additional Water Conservation Measures: (continued)

a. Limits on Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three days per week on a schedule established and posted by the California American Water Company. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the California American Water Company. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for the express purpose of adjusting or repairing an irrigation system.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification by California American Water Company unless other arrangements are made with California American Water Company.

G. STAGE 2 MANDATORY CONSERVATION

1. Stage 2 Water Conservation exists when an Authorizing Agency determines that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by an Authorizing Agency that water usage should be reduced by 20.01-30% of an historical base period, or that the Measures in Sections D or F are ineffective in complying with an Authorizing Agency reduction of 10.01-20% after three months, or a reduction of 0-10% after six months, California American Water Company will implement the Stage 2 Mandatory Conservation measures identified in this section, after authorized by the Commission.

2. Additional Conservation Measures: In addition to the prohibited uses of water identified in Section D and F, the following additional water conservation requirements apply during a declared Stage 2 Water Conservation:

a. Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to two days per week on a schedule established and posted by California American Water Company. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by California American Water Company. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for very short periods of time for the express purpose of adjusting or repairing an irrigation system. (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

G. STAGE 2 MANDATORY CONSERVATION (continued) (N)

2. Additional Conservation Measures: (continued)

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the California American Water Company unless other arrangements are made with the California American Water Company.

c. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, and have been actively managed within the water feature prior to declaration of a supply shortage level under this Rule.

d. Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

e. Limits on Filling Residential Swimming Pools & Spas: Re-filling and initial filling of residential swimming pools or outdoor spas with potable water is prohibited, except to maintain required operating levels of existing pools and spas.

H. STAGE 3 MANDATORY CONSERVATION

1. A Stage 3 Mandatory Conservation condition is also referred to as an "Emergency" condition. A Stage 3 condition exists when an Authorizing Agency declares a water shortage emergency or that water usage should be reduced by greater than 30% of an historical base period, or that the measures in Section D, F, or G are ineffective in complying with an Authorizing Agency reduction of 20.01-30% after three months, or a reduction of 10.01-20% after six months, or a reduction 0-10% after nine months. Upon the declaration of a Stage 3 Mandatory Conservation condition, California American Water Company will implement the mandatory Stage 3 conservation measures identified in this section, after authorized by the Commission.

2. Additional Conservation Measures: In addition to the prohibited uses of water identified in Section D, F, and G, the following water conservation requirements apply during a declared Stage 3 Mandatory Conservation:

a. No Watering or Irrigating: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless California American Water Company has determined that recycled water is available and may be applied to the use: (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

H. STAGE 3 MANDATORY CONSERVATION (continued) (N)

2. Additional Conservation Measures: (continued)

a. No Watering or Irrigating: (continued)

i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self–closing water shut-off nozzle or device;

ii. Maintenance of existing landscape necessary for fire protection;

iii. Maintenance of existing landscape for soil erosion control;

iv. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;

v. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section D II(b)(1) and time restrictions in Section D (a) and (b)(1);

vi. Actively irrigated environmental mitigation projects.

b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty four (24) hours of notification by California American Water Company unless other arrangements are made with California American Water Company.

c. No New Potable Water Service: Upon declaration of a Stage 3 Mandatory Conservation condition, no new potable water service will be provided, no new temporary meters or permanent meters will be provided for new service, and no statements of immediate ability to serve or provide potable water service (such as, will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:

i. A valid, unexpired building permit has been issued for the project; or

ii. The project is necessary to protect the public health, safety, and welfare; or

iii. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of California American Water Company.

This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less. (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

H. STAGE 3 MANDATORY CONSERVATION (continued) (N)

2. Additional Conservation Measures: (continued)

d. Discontinue Service: California American Water Company may discontinue service to consumers who willfully violate provisions of this section in accordance with Rule No. 11.B.3.

e. No New Annexations: Upon the declaration of a Stage 3 Mandatory Conservation condition, California American Water Company will suspend consideration of annexations to its service area. This subsection does not apply to boundary corrections and annexations that will not result in any increased use of water.

I. ENFORCEMENT OF STAGED MANDATORY CONSERVATION

1. The water use restrictions of the conservation program, in Section D of this rule, become mandatory when the authorized Schedule 14.1-Staged Mandatory Conservation Program is triggered, the utility files a Tier 1 advice letter requesting activation of a particular stage, and authorization is received from the Commission.

a. In the event a customer is observed to be using water for any nonessential or unauthorized use as defined in Section D, F, G or H of this rule, the utility may charge a water use violation fine in accordance with Schedule No. 14.1.

2. The utility may, after one verbal and one written warning, install a flow-restricting device on the service line of any customer observed by utility personnel to be using water for any non-essential or unauthorized use as defined in Section D, F, G or H above.

3. A flow restrictor shall not restrict water delivery by greater than 50% of normal flow and shall provide the premise with a minimum of 3 Ccf/person/month. The restricting device may be removed only by the utility, only after a three-day period has elapsed, and only upon payment of the appropriate removal charge as set forth in Schedule No. 14.1.

4. After the removal of the restricting device, if any non-essential or unauthorized use of water shall continue, the utility may install another flow-restricting device. This device shall remain in place until water supply conditions warrant its removal and until the appropriate charge for removal has been paid to the utility.

5. Any tampering with flow restricting device by customer can result in fines or discontinuation of water use at the utility's discretion.

6. If, despite installation of such flow-restricting device pursuant to the provisions of the previous enforcement conditions, any such non-essential or unauthorized use of water shall continue, then the utility may discontinue water service to such customer. In such latter event, a charge as provided in Rule No. 11 shall be paid to the utility as a condition to restoration of service.

(N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

I. ENFORCEMENT OF STAGED MANDATORY CONSERVATION (continued) (N)

7. All monies collected by the utility through water use violation fines shall not be accounted for as income. All expenses incurred by utility to implement Rule 14.1 and Schedule 14.1 that have not been considered in a General Rate Case or other proceeding, shall be recoverable by utility if determined to be reasonable by Commission. These additional monies shall be accumulated by the utility in a separate memorandum account for disposition as directed or authorized from time to time by the Commission.

8. The charge for removal of a flow-restricting device shall be in accordance with Schedule No. 14.1.

J. APPEAL PROCEDURE

1. Any customer who seeks a variance from any of the provisions of this water conservation plan shall notify the utility in writing, explaining in detail the reason for such a variation. The utility shall respond to each such request in writing.

2. Any customer not satisfied with the utility's response may file an appeal with the Division of Water and Audits of the Commission. The customer and the utility will be notified of the disposition of such appeal by letter from the Executive Director of the Commission.

3. If the customer disagrees with such disposition, the customer shall have the right to file a formal complaint with the Commission. Except as set forth in this Section, no person shall have any right or claim in law or in equity, against the utility because of, or as a result of, any matter or thing done or threatened to be done pursuant to the provisions of this water conservation plan.

K. PUBLICITY

1. As stated under Section E.1.b and c, when a utility requests authorization of a Schedule 14.1 – Staged Mandatory Water Conservation tariff, via a Tier 2 advice letter, it shall provide notice of the Tier 2 advice letter and associated public meeting provided to customers, under General Order (GO) 96-B rules, and shall comply with all requirements of Sections 350-358 of the California Water Code (CWC), including but not limited to the following:

   a. In order to be in compliance with both the GO and CWC, the utility shall provide notice via both newspaper and bill message/direct mailing.

   b. Utility shall file one notice for each advice letter filed, that includes both notice of the filing of the Tier 2 advice letter as well as the details of the public meeting (date, time, place, etc).

   c. The public meeting shall be held after the utility files the Tier 2 advice letter, and before the Commission authorizes implementation of the tariff.

   d. Utility shall consult with Division of Water and Audits staff prior to filing advice letter, in order to determine details of public meeting. (N)

(continued)

Rule No. 14.1-SD (continued)

STAGED WATER CONSERVATION PLAN
SOUTHERN DIVISION

(N)

K. PUBLICITY (continued)

2. In the event that a Schedule 14.1-Staged Mandatory Plan is triggered, and a utility requests activation through the filing of a Tier 1 advice letter, the utility shall notify its customers and provide each customer with a copy of Schedule 14.1 by means of bill message or direct mailing. Notification shall take place prior to imposing any fines associated with this plan.

3. During the period that a stage of Schedule 14.1 is activated, the utility shall provide customers with updates in at least every other bill, regarding its water supply status and the results of customers' conservation efforts. (N)

Schedule No. 14.1-COR

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

A. APPLICABILITY (N)

1. This schedule applies to all water customers served under all tariff rate schedules authorized by the Commission for the Coronado District of California-American Water Company. It is only effective in times of mandatory conservation, as required by Rule No. 14.1-SD, and only for the period noted in the Special Conditions section below.
2. This schedule shall remain dormant until a specific stage is activated by Commission authorization of a Tier 1 advice letter.
3. When a particular stage of this schedule is activated, the period over which it shall be effective will be added to tariff language.

B. TERRITORY

This rule is applicable within the Coronado District of California-American Water Company. All others served by California-American Water Company are excluded from this particular tariff, but are included in separate and distinct Water Conservation Plans.

C. STAGES

1. The Permanent water conservation requirements established in Rule 14.1-SD Section D are in effect at all times and reinforcement of them will be the initial response when water supplied to the utility is reduced by 0%-10%.
2. Stage 1 – Mandatory Water Conservation - Water supply is reduced 10.01%-20% or water restrictions under Permanent water conservation have not been effective in reducing water usage to prescribed level.
3. Stage 2 – Mandatory Water Conservation - Water supply is reduced 20.01%-30% or water restrictions at Stage 1 have not been effective in reducing water usage to prescribed level.
4. Stage 3 – Mandatory Water Conservation - Water supply is reduced 30.01% or more or water restrictions at Stage 2 have not been effective in reducing water usage to prescribed level.

D. WATER USE VIOLATION FINE

1. When a stage of this schedule has been activated by Commission authorization, the water use restrictions of the conservation program in Sections D, F, G and H of Rule 14.1-SD as applicable for each Stage become mandatory and are listed in the Special Condition of this tariff. If the Utility determines that a customer is violating the water usage restrictions, as outlined in Rule No. 14.1-SD and the Special Conditions below, the customer will be subject to the following fine structure:

a. First offense:	Written warning, including explanation of penalty for subsequent offense.
b. Second offense (of the same restriction):	Written warning, including explanation of penalty for subsequent offense and $100 fine.
c. Third offense (of the same restriction):	Installation of flow restrictor, and written warning, including explanation of penalty for subsequent offense. (N)

(continued)

Schedule No. 14.1-COR (Continued)

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

D. WATER USE VIOLATION FINE (Continued) (N)

2. Offenses for separate water use restrictions will each start at the warning stage.

3. The water use violation fine is in addition to the regular rate schedule charges.

E. FLOW RESTRICTOR REMOVAL CHARGE

The charge for removal of a flow-restricting device shall be:

Connection Size	Removal Charges
5/8" to 1"	$150.00
1-1/2" to 2	$200.00
3" and larger	Actual Cost

F. SPECIAL CONDITIONS

1. The Tier 1 advice letter requesting activation of any stage of Schedule 14.1 shall include documentation of the overall water shortage justifying activation of that particular stage.

2. This tariff schedule shall remain in effect until the utility files a Tier 1 advice letter to deactivate specific stage of mandatory conservation and such is authorized by Commission.

3. Water use violation fines must be separately identified on each bill.

4. All bills are subject to the reimbursement fee set forth on Schedule No. UF.

5. All monies collected by the utility through water use violation fines shall not be accounted for as income. All expenses incurred by utility to implement Rule 14.1-SD and Schedule 14.1-COR that have not been considered in a General Rate Case or other proceeding, shall be recoverable by utility if determined to be reasonable by Commission. These monies shall be accumulated by the utility in a separate memorandum account for disposition as directed or authorized from time to time by the Commission.

6. No customer shall use utility-supplied water in Stage 1 Mandatory Water Conservation for non-essential or unauthorized uses, including but not limited to:

   a. Limits on Watering Hours: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited between the hours of 9:00 a.m. and 5:00 p.m. on any day, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for the express purpose of adjusting or repairing an irrigation system.

   b. Limit on Watering Duration: Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended is limited to no more than fifteen (15) minutes watering per day per station. This subsection does not apply to landscape irrigation systems that exclusively use very low-flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour and weather based controllers or stream rotor sprinklers that meet a 70% efficiency standard. (N)

(continued)

Schedule No. 14.1-COR (Continued)

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

(N)

F. SPECIAL CONDITIONS (Continued)

6. No customer shall use utility-supplied water in Stage 1 Mandatory Water Conservation for non-essential or unauthorized uses, including but not limited to: (continued)

   c. No Excessive Water Flow or Runoff: Watering or irrigating of any lawn, landscape or other vegetated area in a manner that causes or allows excessive water flow or runoff onto an adjoining sidewalk, driveway, street, alley, gutter or ditch is prohibited.

   d. No Washing Down Hard or Paved Surfaces: Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device, a low-volume, high-pressure cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.

   e. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within seventy-two (72) hours of notification by California-American Water Company unless other arrangements are made with California-American Water Company.

   f. Re-circulating Water Required for Water Fountains and Decorative Water Features: Operating a water fountain or other decorative water feature that does not use re-circulated water is prohibited.

   g. Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility.

   h. Drinking Water Served Upon Request Only: Eating or drinking establishments, including but not limited to a restaurant, hotel, cafe, cafeteria, bar, or other public place where food or drinks are sold, served, or offered for sale, are prohibited from providing drinking water to any person unless expressly requested. Establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

   i. Commercial Lodging Establishments Must Provide Guests Option to Decline Daily Linen Services: Hotels, motels and other commercial lodging establishments must provide customers the option of not having towels and linen laundered daily. Commercial lodging establishments must prominently display notice of this option in each bathroom using clear and easily understood language.

   j. No Installation of Single Pass Cooling Systems: Installation of single pass cooling systems is prohibited in buildings requesting new water service. (N)

(continued)

Schedule No. 14.1-COR (Continued)

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

(N)

F. SPECIAL CONDITIONS (Continued)

6. No customer shall use utility-supplied water in Stage 1 Mandatory Water Conservation for non-essential or unauthorized uses, including but not limited to: (continued)

k. No Installation of Non-re-circulating Water Systems in Commercial Car Wash and Laundry Systems: Installation of non-re-circulating water systems is prohibited in new commercial conveyor car wash and new commercial laundry systems.

l. Restaurants Required to Use Water Conserving Dish Wash Spray Valves: Food preparation establishments, including but not limited to restaurants or cafes, are prohibited from using non-water conserving dish wash spray valves.

m. Use of potable water for watering streets with trucks, except for initial wash-down for construction purposes (if street sweeping is not feasible), or to protect the health and safety of the public is prohibited;

n. Use of potable water for construction purposes, such as consolidation of backfill, dust control, or other uses unless no other source of water or other method can be used is prohibited.

o. Use of potable water for construction purposes unless no other source of water or other method can be used is prohibited;

p. Use of potable water for street cleaning is prohibited;

q. Operation of commercial car washes without recycling at least 50% of the potable water used per cycle is prohibited; and

r. Use of potable water to flush hydrants, except where required for public health or safety is prohibited.

s. Limits on Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to three days per week on a schedule established and posted by the California-American Water Company. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by the California-American Water Company. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for the express purpose of adjusting or repairing an irrigation system. (N)

(continued)

Schedule No. 14.1-COR (Continued)

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

(N)

F. SPECIAL CONDITIONS (Continued)

7. No customer shall use utility-supplied water in Stage 2 Mandatory Conservation for non-essential or unauthorized uses, including but not limited to those above in Stage 1 and the following:

   a. Watering Days: Watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to two days per week on a schedule established and posted by California-American Water Company. During the months of November through March, watering or irrigating of lawn, landscape or other vegetated area with potable water is limited to no more than one day per week on a schedule established and posted by California-American Water Company. This provision does not apply to landscape irrigation zones that exclusively use very low flow drip type irrigation systems when no emitter produces more than two (2) gallons of water per hour. This provision also does not apply to watering or irrigating by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, or for the express purpose of adjusting or repairing an irrigation system.

   b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within forty-eight (48) hours of notification by the California-American Water Company unless other arrangements are made with the California-American Water Company.

   c. Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, and have been actively managed within the water feature prior to declaration of a supply shortage level under this Rule.

   d. Limits on Washing Vehicles: Using water to wash or clean a vehicle, including but not limited to, any automobile, truck, van, bus, motorcycle, boat or trailer, whether motorized or not, is prohibited except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

   e. Limits on Filling Residential Swimming Pools & Spas: Re-filling and initial filling of residential swimming pools or outdoor spas with potable water is prohibited, except to maintain required operating levels of existing pools and spas. (N)

(continued)

Schedule No. 14.1-COR (Continued)

STAGED WATER CONSERVATION PLAN
CORONADO DISTRICT

F. SPECIAL CONDITIONS (Continued) (N)

8. No customer shall use utility-supplied water in Stage 3 Mandatory Water Conservation for non-essential or unauthorized uses, including but not limited to those above in Stages 1 and 2 and the following:

   a. No Watering or Irrigating: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless California-American Water Company has determined that recycled water is available and may be applied to the use:

      i. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self–closing water shut-off nozzle or device;

      ii. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container, hand-held hose equipped with a positive self–closing water shut-off nozzle or device;

      iii. Maintenance of existing landscape necessary for fire protection;

      iv. Maintenance of existing landscape for soil erosion control;

      v. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;

      vi. Maintenance of landscape within active public parks and playing fields, day care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established in Section G. 2. a. and time restrictions in Section D. 1. of Rule 14.1-SD;

      vii. Actively irrigated environmental mitigation projects.

   b. Obligation to Fix Leaks, Breaks or Malfunctions: All leaks, breaks, or other malfunctions in the water user's plumbing or distribution system must be repaired within twenty four (24) hours of notification by California-American Water Company unless other arrangements are made with California-American Water Company.

(N)

APPENDIX C. PUBLIC HEARING NOTICE

The San Diego Union-Tribune. SIGN ON SAN DIEGO enlace Classifieds

P.O. Box 120191, San Diego, CA 92112-0191

AFFIDAVIT OF PUBLICATION

BNA COMMINICATIONS
PO BOX 632940
ATTN: KELLY MURPHY
SAN DIEGO, CA 92163

STATE OF CALIFORNIA} ss.
County of San Diego}

The Undersigned, declares under penalty of perjury under the laws of the State of California: That she is a resident of the County of San Diego. That she is and at all times herein mentioned was a citizen of the United States, over the age of twenty-one years, and that she is not a party to, nor interested in the above entitled matter; that she is Chief Clerk for the publisher of

The San Diego Union-Tribune

a newspaper of general circulation , printed and published daily in the City of San Diego, County of San Diego, and which newspaper is published for the dissemination of local news and intelligence of a general character, and which newspaper at all the times herein mentioned had and still has a bona fide subscription list of paying subscribers, and which newspaper has been established, printed and published at regular intervals in the said City of San Diego, County of San Diego, for a period exceeding one year next preceding the date of publication of the notice hereinafter referred to, and which newspaper is not devoted to nor published for the interests, entertainment or instruction of a particular class, profession, trade, calling, race, or denomination, or any number of same; that the notice of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

Aug 3, 2011, Aug 10, 2011

Zack Manuel
Chief Clerk for the Publisher

8/12/11
Date

Affidavit of Publication of

Legal Advertisement
Ad # 0010536498
ORDERED BY: KELLY MURPHY LAMKIN

NOTICE OF PUBLIC HEARING

On California American Water's Urban Water Management Plan

California American Water will hold a public hearing on Thursday, August 18, 2011 on the final draft of the 2010 Urban Water Management Plan for its San Diego County District service area. This service area includes the cities of Coronado, Imperial Beach, a section of the City of San Diego, and a small portion of Chula Vista. Copies of the plan will be available for public review and public comment will be accepted. The hearing will be held at 1:00 p.m. at the California American Water office located at 1019 Cherry Avenue, Imperial Beach, CA 91932.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Jay Goldstone
Chief Operating Officer
City of San Diego
202 C St., 11th Floor
San Diego, CA 92101

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. Goldstone:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

In the interest of agency coordination, this letter serves as your official notice of the UWMP public hearing. A draft of the UWMP is now available for review at our office or online at www.californaamwater.com.

Your expertise and interest in this matter is requested to help us gather necessary information as part of our ongoing efforts to improve overall conservation performance in our San Diego County service district.

If you or a member of your agency plans on attending the public hearing please RSVP by Friday, August 12. To confirm your attendance please contact Brian Barreto, California American Water's external affairs manager at 626-614-2542.

For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Blair King
City Manager
City of Coronado
1825 Strand Way
Coronado, CA 92118

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. King:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Gary Brown
City Manager
City of Imperial Beach
825 Imperial Beach Blvd.
Imperial Beach, CA 91932

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. Brown:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Jim Sandoval
City Manager
City of Chula Vista
276 Fourth Avenue
Chula Vista, CA 91910

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. Sandoval:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Walter Ekard
Chief Administrative Officer
County of San Diego
1600 Pacific Highway, Room 209
San Diego, CA 92101

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. Ekard:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

General Manager
Sweetwater Authority
505 Garrett Avenue
Chula Vista, CA 91910

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear General Manager:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Mr. Mark Watton
General Manager
Otay Water District
2554 Sweetwater Springs Blvd.
Spring Valley, CA 91978

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Mr. Watton:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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If you or a member of your agency plans on attending the public hearing please RSVP by Friday, August 12. To confirm your attendance please contact Brian Barreto, California American Water's external affairs manager at 626-614-2542.

For additional information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

CALIFORNIA
AMERICAN WATER

August 4, 2011

Ms. Maureen Stapleton
General Manager
San Diego County Water Authority
4677 Overland Avenue
San Diego, CA 92123

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Ms. Stapleton:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932.

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Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Spencer Waterman, Water Systems Consulting, Inc.

APPENDIX D. CUWCC BEST MANAGEMENT PRACTICE REPORT

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Base Year Data

Link to FAQs

Reporting Unit Base Year

What is your reporting period? Calendar

Base Year: 2008

BMP 1.3 Metering

Number of unmetered accounts in Base Year: 0

BMP 3.1 & BMP 3.2 & BMP 3.3 Residential Programs

Number of Single Family Customers in Base Year: 18,120

Number of Multi Family Units in Base Year: 322

BMP 3.4 WaterSense Specification (WSS) Toilets

Number of Single Family Housing Units constructed prior to 1992:

Number of Multi Family Units prior to 1992:

Average number of toilets per single family household: 2.5

Average number of toilets per multi family household: 1.5

Five year average resale rate of single family households: 4.78%

Five-year average resale rate of multi family households: 5.98%

Average number of persons per single family household: 3.3

Average number of persons per multi family household: 2.5

BMP 4.0 & BMP 5.0 CII & Landscape

Total water use (in Acre Feet) by CII accounts: 3424.07

Number of accounts with dedicated irrigation meters: 44

Number of CII accounts without meters or with Mixed Use Meters: 1,584

Number of CII accounts: 1,628

Comments:

version 1.0

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

WATER SOURCES

2009

Service Area Population: 95,609 Census

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
City of San Diego	11,593.73	Surface	PURCHASED WATER
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

2009

Service Area Population: 95,609

Non- Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	If you select Other for type, enter Water Supply Description
N/A		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
N/A		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,
N/A		

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Water Uses

2009

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single-Family	18,038.00	5,521.98			
Multi-Family	1,396.00	2,708.32			
Commercial	657.00	1,274.51			
Institutional	315.00	1,539.07			
Fire Lines	419.00	0.23			
Other	18.00	47.16			
Other					
Other					
Other					
Other					
Other					
Other					
Other					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Water Uses 2009

Non-Potable Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					N/A
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

Non-Potable Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					N/A
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2009

BMP 1.1 Operations Practices

Comments:

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Conservation Coordinator

Conservation Coordinator (•) Yes ( ) No

Contact Information

First Name: PATRICK

Last Name: PILZ

Title: MANAGER, CONSERVATION & E

Phone: 619-435-7459

Email: patrick.pilz@amwater.com

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list: http://www.amwater.com/caaw/Customer-Service/voluntary-water-conservation-program.html

Enter a description:

Rule 14.1 is a voluntary ordinance that establishes a water conservation program that will reduce water consumption, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within California American Water Company's San Diego Division's service area to avoid and minimize the effect and hardship of water

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

View MOU

2009 BMP 1.2 Water Loss Control

Did your agency complete a pre-screening system audit in 2009? Yes (●) No ( )

If yes, answer the following:

Determine metered sales in AF: 11,091.27

Definition: other accountable uses not included in metered sales, such as unbilled water use, fire suppression, etc.

Determine system verifiable uses AF: 502.48

Determine total supply into the system in AF: 11,593.75

Does your agency keep necessary data on file to verify the answers above? Yes (●) No ( )

Did your agency complete a full-scale system water audit during 2009? Yes ( ) No (●)

Does your agency maintain in-house records of audit results or the completed AWWA worksheet for the completed audit which could be forwarded to CUWCC? Yes ( ) No (●)

Did your agency operate a system leak detection program? Yes (●) No ( )

Comments:

version 1.0 2009

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ○ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ◉ Yes ○ No

Are all new service connections being billed volumetrically? ◉ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ◉ Yes ○ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	18,083	18,083	18,083	Bi-monthly	102
Multi-Family	1,396	1,396	1,396	Bi-monthly	0
Commericial	657	657	657	Bi-monthly	8
Institutional	315	315	315	Bi-monthly	10
Fire Lines	419	419	419	Bi-monthly	0
Other	1	1	1	Bi-monthly	1
Other				Other	
Other				Other	
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters: 657

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 44

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? ○ Yes ◉ No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Email or provide a link to the feasibility study (or description of):

File name(s): Email files to natalie@cuwcc.org Enter the file name here e.g. WaterWastePreventionOrdinan

Web address(s) URL: comma-separated list Enter the URL to your documentation.

General Comments about BMP 1.3:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

CUWCC

2009

BMP 1.4 Retail Conservation Pricing

Link to FAQs

View MOU

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Increasing Block		7,730,451.00	1,074,888.00
Uniform		5,258,265.00	408,595.00
Uniform		2,052,866.00	118,425.00
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			

Implementation Option (Conservation Pricing Option)

(•) Use Annual Revenue As Reported

( ) Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service ( ) Yes (•) No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

View MOU

2009

BMP 2.1 Public Outreach - Retail Reporting

Is a Wholesale Agency Performing Public Outreach?

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP? ○ Yes ◉ No

Enter the name(s) of the wholesale agency (comma delimited)

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Public Contacts	Public Information Programs
1	Newsletter articles on conservation
3	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
5	Landscape water conservation media campaigns
4	Website
	Select a public contact

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? ○ Yes ◉ No

Enter the name(s) of the wholesale agency (comma delimited)

OR Retail Agency (Contacts with the Media)

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
5		News releases
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○ Yes ⊙ No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address): www.amwater.com/caaw

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Updated Smart Rebate Information.
Added conservation rebate applications when Smart Rebates stopped due to Prop 50 allocations being put on hold. Added leak prevention kit info to website.
Updated contact phone numbers.

Did at least one Website Update take place during each quarter of the reporting year? ⊙ Yes ○ No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount		Personnel Costs Included? If yes, check the box.	Comments	
Public Outreach	$20,000				

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.1 Public Outreach Cont'd

View MOU

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
Public Outreach	$21,600	

If yes, check the check box.

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? ○ Yes ⊙ No

Public Outreach Additional Information

Public Information Programs	Importance

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? ○ Yes ⊙ No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? ○ Yes ⊙ No

Market Research Topic	
Brand Message	
Brand Mission Statement	

Community Committees

Do you have a community conservation committee? ○ Yes ⊙ No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☐ Master Gardeners?	
☐ Cooperative Extension?	
☐ Local Colleges?	
☐ Other	
☐ Retail and wholesale outlet; name(s) and type(s) of programs:	

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2009

BMP 2.2 School Education Programs, Retail Agencies

View MOU

School Programs

Is your agency implementing school programs which can be counted to help another agency comply with this BMP? ○Yes ⊙No

Enter Wholesaler Names, separated by commas:

☑ Materials meet state education framework requirements?

Description of Materials: Educational activity books

☑ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: Educational activity books

Number of students reached:

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students:

Number of Distribution:

Annual budget for school education program:

Description of all other water supplier education programs:

School Program Activities

Classroom presentations:

Number of presentations: Number of attendees:

Large group assemblies:

Number of presentations: 1 Number of attendees: 1000

Children's water festivals or other events:

Number of presentations: Number of attendees:

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: Number of attendees:

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths | Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered | Total Funding

Teacher training workshops:

Number of presentations | Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips | Number of participants

College internships in water conservation offered:

Number of internships: 1 | Total funding: 12663

Career fairs/workshops:

Number of presentations | Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) | Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs): 0

Comments

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

WATER SOURCES

2010

Service Area Population: 95,359 Census

Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
City of San Diego	11,210.67	Surface	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	
		Other	

Exported Water Name	AF/YEAR	Where Exported?

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

2010

Service Area Population: 95,359

Non- Potable Water

Own Supply Source Name	AF/YEAR	Water Supply Type	If you select Other for type, enter Water Supply Description
N/A		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Imported Supply Source Name	AF/YEAR	Water Supply Type	Water Supply Description
N/A		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	
		Select a water type.	

Exported Water Name	AF/YEAR	Where Exported? such as groundwater recharge, retail,

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Water Uses 2010

Potable Water Billed

Make sure to enter numbers in AF/Year.

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Single-Family	18,332.00	5,179.00			
Multi-Family	1,353.00	2,549.00			
Commercial	616.00	952.00			
Institutional	210.00	1,091.00			
Dedicated Irrigation	390.00	963.00			
Other	2.00	3.00			
Other					
Other					
Other					
Other					
Other					
Other					
Other					

Potable Water Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Division name (Reporting unit): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Water Uses 2010

Non-Potable Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

Non-Potable Un-Billed

Customer Type	Meter Accounts	Metered Water Delivered	Un-metered Accounts	Un-metered Water Delivered	Description
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					
Other					

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

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Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2010

BMP 1.1 Operations Practices

Comments:

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Conservation Coordinator

Conservation Coordinator (•) Yes ( ) No

Contact Information

First Name	Patrick
Last Name	Pilz
Title	Manager of Water Conservation an
Phone	619-435-7459
Email	patrick.pilz@amwater.com

Note that the contact information may be the same as the primary contact information at the top of the page. If this is your case, excuse the inconvenience but please enter the information again.

Water Waste Prevention

Water Agency shall do one or more of the following:

a. Enact and enforce an ordinance or establish terms of service that prohibit water waste
b. Enact and enforce an ordinance or establish terms of service for water efficient design in new development
c. Support legislation or regulations that prohibit water waste
d. Enact an ordinance or establish terms of service to facilitate implementation of water shortage response measures
e. Support local ordinances that prohibit water waste
f. Support local ordinances that establish permits requirements for water efficient design in new

To document this BMP, provide the following:

a. A description of, or electronic link to, any ordinances or terms of service
b. A description of, or electronic link to, any ordinances or requirements adopted by local jurisdictions or regulatory agencies with the water agency's service area.
c. A description of any water agency efforts to cooperate with other entities in the adoption or enforcement of local requirement
d. description of agency support positions with respect to adoption of legislation or regulations

You can show your documentation by providing files, links (web addresses), and/or entering a description.

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list: http://www.amwater.com/caaw/Customer-Service/voluntary-water-conservation-program.html

Enter a description:

Rule 14.1 is a voluntary ordinance that establishes a water conservation program that will reduce water consumption, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, and maximize the efficient use of water within California American Water Company's San Diego Division's service area to avoid and minimize the effect and hardship of water

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

Link to FAQs

2010 BMP 1.2 Water Loss Control

View MOU

AWWA Water Audit

Agency to complete a Water Audit & Balance Using The AWWA Software ⊙ Yes ○ No

Email to natalie@cuwcc.org - Worksheets (AWWA Water Audit). Enter the name of the file below:

AWWA Water Loss Audit 2010 - SD

Water Audit Validity Score from AWWA spreadsheet: 94

Agency Completed Training In The AWWA Water Audit Method ⊙ Yes ○ No

Agency Completed Training In The Component Analysis Process ⊙ Yes ○ No

Completed/Updated the Component Analysis (at least every 4 years)? ⊙ Yes ○ No

Component Analysis Completed/Updated Date: 2/2010

Water Loss Performance

Agency Repaired All Reported Leaks & Breaks To The Extent Cost Effective ⊙ Yes ○ No

Recording Keeping Requirements:

Date/Time Leak Reported	Leak Location
Type of Leaking Pipe Segment or Fitting	Leak Running Time From Report to Repair
Leak Volume Estimate	Cost of Repair

Agency Located and Repaired Unreported Leaks to the Extent Cost Effective ⊙ Yes ○ No

Type of Program Activities Used to Detect Unreported Leaks

California American Water San Diego monitors water production and sales on a monthly basis and completes an annual report indentifying the total percent of unaccounted water loss

Annual Summary Information

Complete the following table with annual summary information (required for reporting years 2-5 only)

version 1.0

2010

Total Leaks Repaired	Economic Value Of Real Loss	Economic Value Of Apparent Loss	Miles Of System Surveyed For Leaks	Pressure Reduction Undertaken for loss reduction	Cost Of Interventions	Water Saved (AF/Year)

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

BMP 1.3 Metering with Commodity

2010

Link to FAQs

See the complete MOU: View MOU

See the coverage requirements for this BMP:

Implementation

Does your agency have any unmetered service connections? ○ Yes ◉ No

If YES, has your agency completed a meter retrofit plan? ○ Yes ○ No

Enter the number of previously unmetered accounts fitted with meters during reporting year:

Are all new service connections being metered? ◉ Yes ○ No

Are all new service connections being billed volumetrically? ◉ Yes ○ No

Has your agency completed and submitted electronically to the Council a written plan, policy or program to test, repair and replace meters? ◉ Yes ○ No

Please Fill Out The Following Matrix

Account Type	# Metered Accounts	# Metered Accounts Read	# Metered Accounts Billed by Volume	Billing Frequency Per Year	# of estimated bills/yr
Single-Family	18,332	18,332	18,332	Bi-monthly	61
Multi-Family	1,353	1,353	1,353	Bi-monthly	20
Commericial	616	616	616	Bi-monthly	39
Institutional	210	210	210	Bi-monthly	0
Dedicated Irrig	390	390	390	Bi-monthly	0
Other	2	2	2	Bi-monthly	0
Other				Other	
Other				Other	
Other				Other	
Other				Other	

Number of CII Accounts with Mixed-use Meters: 226

Number of CII Accounts with Mixed-use Meters Retrofitted with Dedicated Irrigation Meters during Reporting Period: 390

Feasibility Study

Has your agency conducted a feasibility study to assess the merits of a program to provide incentives to switch mixed-use accounts to dedicated landscape meters? ○ Yes ◉ No

If YES, please fill in the following information:

A. When was the Feasiblity Study conducted

B. Describe, upload or provide an electronic link to the Feasibility Study Upload File

File name(s): Email files to natalie@cuwcc.org

Web address(s) URL: comma-separated list

Comments:

The fields in red are required.

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Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

You must enter the reporting unit number that we have on record for your agency. Click here to open a table to obtain this number.

CUWCC

2010

BMP 1.4 Retail Conservation Pricing

Link to FAQs

View MOU

If you are reporting more rate structures than this form allows, add the structures to a spreadsheet and send the file to natalie@cuwcc.org.

Implementation (Water Rate Structure)

Enter the Water Rate Structures that are assigned to the majority of your customers, by customer class

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Increasing Block		7,088,685.00	1,137,430.00
Uniform		5,096,565.00	432,989.00
Uniform		2,509,507.00	125,514.00
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			

Implementation Option (Conservation Pricing Option)

- (•) Use Annual Revenue As Reported
- ( ) Use Canadian Water & Wastewater Association Rate Design Model

If CWWA is select, enter the file name and email the spreadsheet to natalie@cuwcc.org

Retail Waste Water (Sewer) Rate Structure by Customer Class

Agency Provide Sewer Service ( ) Yes (•) No

Select the Retail Waste Water(Sewer) Rate Structure assigned to the majority of your customers within a specific customer class.

Rate Structure	Customer Class	Total Revenue Commodity Charges	Total Revenue Customer Meter/Service (Fixed Charges)
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			
Select a Rate St			

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

View MOU

2010

BMP 2.1 Public Outreach - Retail Reporting

Is a Wholesale Agency Performing Public Outreach?

Are there one or more wholesale agencies performing public outreach which can be counted to help your agency comply with the BMP? ○ Yes ◉ No

Enter the name(s) of the wholesale agency (comma delimited)

Is your agency performing public outreach?

Report a minimum of 4 water conservation related contacts your agency had with the public during the year.

Public Information Programs List

Did at least one contact take place during each quarter of the reporting year? ☑

Number of Public Contacts	Public Information Programs
2	Landscape water conservation media campaigns
14	Flyers and/or brochures (total copies), bill stuffers, messages printed on bill, information packets
	Select a public contact
	Select a public contact
	Select a public contact

Contact with the Media

Are there one or more wholesale agencies performing media outreach which can be counted to help your agency comply with the BMP? ○ Yes ○ No

Enter the name(s) of the wholesale agency (comma delimited)

OR Retail Agency (Contacts with the Media)

Media Contacts List

Did at least one contact take place during each quarter of the reporting year? ☐

Number of Media Contacts	Did at least one contact take place during each quarter of the reporting year?	Media Contact Types
1		Television contacts
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact
		Select a type of media contact

Is a Wholesale Agency Performing Website Updates?

Did one or more CUWCC wholesale agencies agree to assume your agency's responsibility for meeting the requirements of and for CUWCC reporting of this BMP? ○ Yes ⊙ No

Enter the name(s) of the wholesale agency (comma delimited)

Is Your Agency Performing Website Updates?

Enter your agency's URL (website address): http://www.amwater.com/caaw/learning-center/wise-water-use/conservation-and-rebates--san-diego.html

Describe a minimum of four water conservation related updates to your agency's website that took place during the year:

Did at least one Website Update take place during each quarter of the reporting year? ○ Yes ○ No

Public Outreach Annual Budget

Enter budget for public outreach programs. You may enter total budget in a single line or brake the budget into discrete categories by entering many rows. Please indicate if personnel costs are included in the entry.

Category	Amount		Personnel Costs Included? If yes, check the box.	Comments	
Public Outreach	$20,000				

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

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Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

2010

BMP 2.1 Public Outreach Cont'd

View MOU

Public Outreach Expenses

Enter expenses for public outreach programs. Please include the same kind of expenses you included in the question related to your budget (Section 2.1.7, above). For example, if you included personnel costs in the budget entered above, be sure to include them here as well.

Expense Category	Expense Amount	Personnel Costs Included?
Public Outreach	$15,178	☐
		☐
		☐
		☐

If yes, check the check box.

Additional Public Information Program

Please report additional public information contacts. List these additional contacts in order of how your agency views their importance / effectiveness with respect to conserving water, with the most important/ effective listed first (where 1 = most important).

Were there additional Public Outreach efforts? ○ Yes ⊙ No

Public Outreach Additional Information

Public Information Programs	Importance

Social Marketing Programs

Branding

Does your agency have a water conservation "brand," "theme" or mascot? ○ Yes ⊙ No

Describe the brand, theme or mascot.

Market Research

Have you sponsored or participated in market research to refine your message? ○ Yes ⊙ No

Market Research Topic

Brand Message

Brand Mission Statement

Community Committees

Do you have a community conservation committee? ○ Yes ⊙ No

Enter the names of the community committees:

Training

Training Type	# of Trainings	# of Attendees	Description of Other

Social Marketing Expenditures

Public Outreach Social Marketing Expenses

Expense Category	Expense Amount	Description

Partnering Programs - Partners

Name	Type of Program
☐ CLCA?	
☐ Green Building Programs?	
☐ Master Gardeners?	
☐ Cooperative Extension?	
☐ Local Colleges?	
☐ Other	

☐ Retail and wholesale outlet; name(s) and type(s) of programs:

Partnering Programs - Newsletters

Number of newsletters per year

Number of customers per year

Partnering with Other Utilities

Describe other utilities your agency partners with, including electrical utilities

Conservation Gardens

Describe water conservation gardens at your agency or other high traffic areas or new

California American Water sponsors school education programs at the Water Conservation Gardens at Cuyamaca College, but this lies outside of the district's service area.

Landscape contests or awards

Describe water wise landscape contest or awards program conducted by your agency

Comments:

The fields in red are required.

Agency name: CALIFORNIA AMERICAN WATER

Reporting unit name (District name): SAN DIEGO

Reporting unit number: 7007

Primary contact:

First name: PATRICK

Last name: PILZ

Email: patrick.pilz@amwater.com

Click here to open a table that displays your agency name reporting unit name and reporting unit number. Please ensure that you enter the correct information.

Link to FAQs

View MOU

2010

BMP 2.2 School Education Programs, Retail Agencies

School Programs

Is a wholesale agency implementing school programs which can be counted to help your agency comply with this BMP? ○Yes ⊙No

Enter Wholesaler Names, separated by commas:

☑ Materials meet state education framework requirements?

Description of Materials: Educational Activity Books

☑ Materials distributed to K-6 Students?

Description of materials distributed to K-6 Students: Educational Activity Books

Number of students reached: 596

☐ Materials distributed to 7-12 Students?

Description of materials distributed to 7-12 Students:

Number of Distribution:

Annual budget for school education program: $20,000.00

Description of all other water supplier education programs: California American Water-San Diego County District has developed a partnership with the Conservation Garden at Cuyamaca College, a local nonprofit organization, for students attending schools located in the San Diego County district service area. Students are bused to the garden and receive a lecture and tour of the garden by Pam Meisner (a.k.a. Ms. Smarty-Plants) that outlines basic water conservation principles and specific plant and landscaping knowledge to reduce outdoor water use. In 2010, there were 4 school field trips to the Garden, with a total of 695 student participants.

School Program Activities

Classroom presentations:

Number of presentations: | Number of attendees:

Large group assemblies:

Number of presentations: 1 | Number of attendees: 1000

Children's water festivals or other events:

Number of presentations: | Number of attendees:

Cooperative efforts with existing science/water education programs (various workshops, science fair awards or judging) and follow-up:

Number of presentations: | Number of attendees:

Other methods of disseminating information (i.e. themed age-appropriate classroom loaner kits):

Description

Number distributed

Staffing children's booths at events & festivals:

Number of booths | Number of attendees

Water conservation contests such as poster and photo:

Description

Number distributed

Offer monetary awards/funding or scholarships to students:

Number Offered | Total Funding

Teacher training workshops:

Number of presentations | Number of attendees

Fund and/or staff student field trips to treatment facilities, recycling facilities, water conservation gardens, etc.:

Number of tours or field trips: 4 | Number of participants: 685

College internships in water conservation offered:

Number of internships: 1 | Total funding: 20229

Career fairs/workshops:

Number of presentations | Number of attendees

Additional program(s) supported by agency but not mentioned above:

Description

Number of events (if applicable) | Number of participants

Total reporting period budget expenditures for school education programs (include all agency costs):

Comments

APPENDIX E. DWR REVIEW CHECKLIST

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Table 1-3; Sections 1.1 and 1.2
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Section 1.2 and Appendix H
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Section 1.2 and Appendix G.
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Section 1.2
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		Table 1-3; Sections 1.1 and 1.2; Appendix C and Appendix H
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Section 1.2; Appendix C
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Section 1.2; Appendix G
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Section 1.2.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Section 1.2
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Section 1.2
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Section 2.1
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Sections 2.1.1 and 2.2
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Section 2.2; Table 2-4
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Section 2.2; Table 2-4
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Section 2.2
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		Section 3.1; Appendix A
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Section 1.2; Appendix C

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		No standardized form available in section 10608.40
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Section 3.2
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Section 3.3. and Appendix H
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		Section 3.2.1
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Section 4.1
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Section 4.2
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		Not applicable
16	Describe the groundwater basin.	10631(b)(2)		Not applicable

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		Not applicable
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Not applicable
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		Not applicable
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		Not applicable
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	Not applicable
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Section 4.4
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Section 4.7
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Section 4.5
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Section 4.6

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Section 4.6.1
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Section 4.6.1
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Section 4.6
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Section 4.6
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Section 4.6
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		Section 4.6
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		Section 4.6
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		Section 5.1.3
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Section 5.1

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Section 5.1
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Section 5.2
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Section 5.2.3
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Section 5.2.4
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		Section 5.2.2
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		Section 5.2.2
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		Section 5.2.2
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		Section 5.2.5
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		Section 5.2.8
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		Section 5.2.6

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Section 5.3
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Section 5.2.7
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Section 6
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Section 6
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		Section 6
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	Section 6
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	Appendix D

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

APPENDIX F. DEMAND PROJECTION METHODOLOGY

Demand projections were developed by applying the following methodology:

1. **Calculate SB7 Baseline and Targets.** WSC calculated the baseline, compliance, interim target, and target per capita water use for the San Diego County District in compliance with SB7 requirements. The Per Capita Water Use Technical Memorandum describes how these per capita numbers were calculated (see Appendix A).
2. **Estimate population growth rates for each service area.** WSC calculated population projections and annual growth rates for each service area based on SANDAG projections:
    a. SANDAG provided a database of population projections up to 2030 in Excel format. The population projections years were 2008, 2015, 2020, 2025, and 2030. The database assigns population projections to each unique Master Geographic Area (MGRA). California American Water's service areas overlie approximately 504 MGRAs. The MGRAs were intersected with California American Water's service area boundaries using GIS.
    b. The next step involved calculating the population per area for each MGRA area and calculating the amount of acres in each MGRA that were overlapped by a California American Water service area boundary. The MGRA population per area factor calculated for each MGRA was applied to the amount of area in each MGRA overlapped by a California American Water service area.
    c. Then, the projections for the District were interpolated to provide a population projection for every year between 2011 and 2030.
    d. Lastly, an annual growth rate was calculated for each year for the District.
3. **Estimate 2010 population.** WSC utilized population data from the 2010 census, to the block level, and intersected these data with California American Water service area boundaries to calculate population in the District.
4. **Develop population projections through 2030.** WSC applied the growth rates calculated in step 2 to the 2010 population to calculate annual population estimates through 2030 for the District.
5. **Develop total demand projections.** WSC applied the Interim target gpcd to the projected population in 2015 to estimate District total demand. WSC applied the target gpcd to the estimated projected population in 2020, 2025 and 2030 to estimate District total demand. The target gocd for the District was calculated to meet SB 7 compliance. Table F-1 shows the current and projected gpcd for the San Diego County District.

Table F-1. Actual and Projected GPCD for the San Diego County District

	Actual GPCD	Projected GPCD			
	2010	2015	2020	2025	2030
San Diego County District	105	118	116	116	116

6. **Apportion total demand to DWR customer categories.** WSC established the amount of connections per type of use and the associated deliveries per type of use in 2010 based on California American Water records (2010 customer database and 2010 Operating Report). The number of connections per type of use for 2015-2030 was estimated by applying the annual population growth rates. The volume of water deliveries by connection type for 2015-2030 was calculated by multiplying the 2010 volume of water deliveries for each connection type by the total District percentage increase or decrease in water deliveries for each year calculated based on gpcd. This essentially distributes the allowed increase or required decrease in water usage among connection types based on 2010 demand by connection type.

APPENDIX G. ADOPTION RESOLUTION

CALIFORNIA
AMERICAN WATER

January 9, 2012

Attention: Coordinator, Urban Water Management Plans
Department of Water Resources
Statewide Integrated Water Management
Water Use and Efficiency Branch
901 P Street
Sacramento, CA 95814

Subject: Adoption of California American Water's Southern Division - San Diego County District 2010 Urban Water Management Plan

To Whom It May Concern:

This letter shall confirm that California American Water Company ("California American Water") has adopted its 2010 Urban Water Management Plan for the Southern Division - San Diego County District. The Urban Water Management Planning Act ("Act"), codified in California Water Code Sections 10610 through 10656, requires an urban water supplier, such as California American Water, to prepare and adopt an urban water management plan ("UWMP"). In accordance with the Act, California American Water is proud to submit its 2010 UWMP to the California Department of Water Resources ("DWR") for review.

Sincerely,

Richard C. Svindland
Vice President - Engineering
California American Water

APPENDIX H. 60 DAY NOTIFICATION LETTERS

CALIFORNIA
AMERICAN WATER

June 15, 2011

Jay Goldstone
Chief Operating Officer
202 C St., 11th Floor
San Diego, CA 92101

Subject: California American Water 2010 Urban Water Management Plan

Dear Mr. Goldstone:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). The Act requires California American Water to notify cities and counties within its service areas that it is preparing its 2010 UWMP 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This letter serves as your official notice of preparation and intent to adopt the UWMP. A draft of the UWMP will be available for review in early July 2011. Until that time, if you have any questions or comments regarding the San Diego County District UWMP please contact Water Systems Consulting, Inc., the consultant responsible for the preparation of the UWMP at:

Water Systems Consulting, Inc.
Attn. Ms. Lianne Williams, Staff Engineer
3765 South Higuera St. Suite 102
San Luis Obispo, California 93401
(805) 457-8833 ext. 108
(805) 441-6158
lwilliams@wsc-inc.com

Sincerely,

Chris Mattis
Operations Manager,
California American Water - San Diego County District

cc: Patrick Pilz (California American Water)
Lianne Williams (Water Systems Consulting, Inc.)

CALIFORNIA
AMERICAN WATER

June 15, 2011

Blair King
City Manager
1825 Strand Way
Coronado, CA 92118

Subject: California American Water 2010 Urban Water Management Plan

Dear Mr. King:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). The Act requires California American Water to notify cities and counties within its service areas that it is preparing its 2010 UWMP 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This letter serves as your official notice of preparation and intent to adopt the UWMP. A draft of the UWMP will be available for review in early July 2011. Until that time, if you have any questions or comments regarding the San Diego County District UWMP please contact Water Systems Consulting, Inc., the consultant responsible for the preparation of the UWMP at:

Water Systems Consulting, Inc.
Attn. Ms. Lianne Williams, Staff Engineer
3765 South Higuera St. Suite 102
San Luis Obispo, California 93401
(805) 457-8833 ext. 108
(805) 441-6158
lwilliams@wsc-inc.com

Sincerely,

Chris Mattis
Operations Manager,
California American Water - San Diego County District

cc: Patrick Pilz (California American Water)
Lianne Williams (Water Systems Consulting, Inc.)

CALIFORNIA
AMERICAN WATER

June 15, 2011

Gary Brown
City Manager
825 Imperial Beach Blvd.
Imperial Beach, CA 91932

Subject: California American Water 2010 Urban Water Management Plan

Dear Mr. Brown:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). The Act requires California American Water to notify cities and counties within its service areas that it is preparing its 2010 UWMP 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This letter serves as your official notice of preparation and intent to adopt the UWMP. A draft of the UWMP will be available for review in early July 2011. Until that time, if you have any questions or comments regarding the San Diego County District UWMP please contact Water Systems Consulting, Inc., the consultant responsible for the preparation of the UWMP at:

Water Systems Consulting, Inc.
Attn. Ms. Lianne Williams, Staff Engineer
3765 South Higuera St. Suite 102
San Luis Obispo, California 93401
(805) 457-8833 ext. 108
(805) 441-6158
lwilliams@wsc-inc.com

Sincerely,

Chris Mattis
Operations Manager,
California American Water - San Diego County District

cc: Patrick Pilz (California American Water)
Lianne Williams (Water Systems Consulting, Inc.)

CALIFORNIA
AMERICAN WATER

June 15, 2011

Walter Ekard
Chief Administrative Officer
1600 Pacific Highway, Room 209
San Diego, CA 92101

Subject: California American Water 2010 Urban Water Management Plan

Dear Mr. Ekard:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). The Act requires California American Water to notify cities and counties within its service areas that it is preparing its 2010 UWMP 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This letter serves as your official notice of preparation and intent to adopt the UWMP. A draft of the UWMP will be available for review in early July 2011. Until that time, if you have any questions or comments regarding the San Diego County District UWMP please contact Water Systems Consulting, Inc., the consultant responsible for the preparation of the UWMP at:

Water Systems Consulting, Inc.
Attn. Ms. Lianne Williams, Staff Engineer
3765 South Higuera St. Suite 102
San Luis Obispo, California 93401
(805) 457-8833 ext. 108
(805) 441-6158
lwilliams@wsc-inc.com

Sincerely,

Chris Mattis
Operations Manager,
California American Water - San Diego County District

cc: Patrick Pilz (California American Water)
Lianne Williams (Water Systems Consulting, Inc.)

APPENDIX I. WHOLESALE DEMAND PROJECTIONS

CALIFORNIA
AMERICAN WATER

August 4, 2011

City of San Diego
Manager, Public Utilities Department
600 B Street
San Diego, CA 92101

Subject: **California American Water San Diego County District 2010 Urban Water Management Plan**

Dear Manager, Public Utilities Department:

California American Water is in the process of preparing its San Diego County District 2010 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). California American Water is required by the Act to provide its demand projections to wholesale suppliers. The table shown below from the 2010 UWMP provides California American Water's projected demands for the City of San Diego from 2010 through 2030.

Table 3-12. Demand Projections Provided to Wholesale Suppliers, afy

Wholesaler	2010	2015	2020	2025	2030
City of San Diego	**11,211**	**12,810**	**12,791**	**13,005**	**13,454**

A public hearing for the final draft of the UWMP will be held at 1:00 p.m. on Thursday, August 18, 2011 at 1019 Cherry Avenue, Imperial Beach, CA 91932. This letter serves as your official notice of the UWMP public hearing and demand projections. A draft of the UWMP is now available for review at our office or online at www.californaamwater.com.

If you or a member of your agency plans on attending the public hearing please RSVP by Friday, August 12. To confirm your attendance please contact Brian Barreto, California American Water's external affairs manager at 626-614-2542.

For more information regarding the San Diego County District 2010 UWMP, please feel free to contact me at 626-614-2517 or via email at mark.reifer@amwater.com.

Sincerely,

Mark Reifer
Planning Engineer
California American Water

cc: Lianne Williams, Water Systems Consulting, Inc.